OCTOBER, MDCCCLXII.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

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AND

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RELATING TO

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On Saturday, August 16th, 1862, was published the First Number of a SUCCESSOR TO THE 'INTELLIGENCER,' *entitled*

THE WEEKLY ENTOMOLOGIST, and edited by Messrs. T. BLACKBURN and E. M. GELDART. The publication is now being continued from week to week. Price 3s. 3d. per quarter, postage included.

Those who wish to subscribe are requested to send remittances at once (in Post-Office Orders or Stamps) to—*Mr. T. Blackburn, Bowdon, Cheshire.*

The following Leading Articles have already appeared in the above periodical:—"UNION IS STRENGTH;" "MARTYRS TO ENTOMOLOGY;" "WANTED ENTOMOLOGISTS;" "COLLECTORS AND ENTOMOLOGISTS;" "LECTURES;" "UP TO THE MARK;" and "THE SEASON." Also many notices of Captures, Observations, &c., possessing great interest, as the following:—

Two notices from PROF. ZELLER, of Meseritz; one from H. T. STAINTON, Esq.: reports of the capture of the following species:—*H. rivulalis* (new to Britain), *C. Nerii*, *T. scoliæforme*, *L. Caniola*, &c.: some interesting observations on the larva of *C. immanata* from various Entomologists (among others, Revs. J. Greene, M.A., and J. Hellins, M.A.), notes on *Eupitheciæ* larvæ (by Rev. H. Harpur Crewe), with many other communications, reports of meetings, &c.

A list of Lepidoptera occurring in the neighbourhood of York, with copious notes and observations, is now being continued from week to week.

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NOTICES OF NEW BOOKS.

'*On the Zoology of Ancient Europe.*' By ALFRED NEWTON, M.A., Fellow of Magdalene College, Cambridge, F.L.S., &c. Macmillan & Co., London and Cambridge. 1862.

An essay of great interest: it contains a considerable amount of reliable information, arranged with some judgment, but not methodically. The author seems perfectly aware of this: he assures us he "well knows that his remarks are too discursive:" they certainly would have been more useful to the closet naturalist had they been somewhat more carefully arranged: in fact there seems to be no arrangement, either chronological, geographical or zoological. I think perhaps in a popular lecture this discursive manner may have its advantages; the touch-and-go style is often used to prevent the attention from flagging: but we have here an essay filled with abbreviated references, and assuming, to say the least of it, to be a scientific production; and in such we are apt to expect something in the way of method. Again, I should have preferred a somewhat deeper research into reputed facts; for instance, in the case of the lion, which Mr. Newton claims as a native of Europe, it would have been most delightful to have found conclusive evidence of his former sojourn amongst us; but Mr. Newton's researches, *in the first place*, show that in Asia the *tiger* ascends northward to latitude 52°, and that hence we may conclude the *lion* would bear the climate of Europe; and, *in the second place*, we are referred back to our school-books, and there we shall find that the skin of the lion was a trophy of Hercules, and that Herodotus tells us there were lions in Thrace in the days of Xerxes: here is the passage entire; the conclusion therefrom, that lions were indigenous to Europe, appears to me very like a *non sequitur*:—

"I claim without hesitation for the king of beasts a place in the Fauna of Ancient Europe. We are disposed at first sight to consider the presence of the larger Carnivora as confined to the tropical or quasi-tropical regions of the globe. Allow me to say that this is a very great error. I pass over extinct species, such as the Machærodus or the Felis spelæa, whose relics the unwearied researches of the late Dr. Buckland unequivocally detected in Kent's Hole and the Kirkdale Caverns; for we know not the climatic conditions under which those formidable creatures once existed in this country. But at the present day it is incontestible that the tiger (*Felis Tigris*)—specifically identical with the treacherous inhabitant of the jungles of Bengal—not only crosses the snows of the Himalayah Mountains, as, in truth, has long been known, but even extends its range throughout China, to that district—the valley of the river Amoor—by which the boundaries of the Russian Empire have recently been 'rectified.' The labours of Von Middendorff, Von Schrenck and others, have shown that it is an ordinary resident at all seasons of the year, and frequently destructive to men and cattle, about the mouth of the river Ussuri, in north latitude 48° (nearly that of Vienna); and also that it even passes over the ice in latitude 52° (almost as far north as our present place of meeting), to devastate the island of Saghalien, where, according to Keith Johnstone's 'Physical Atlas,' the mean temperature is that of Iceland, while the winters are as severe as those of St. Petersburg. I therefore do not question that the legends of ancient Greece may have had a strictly local origin, when they assert that the first settlers in Argolis met with lions there. The early trophy of Hercules—the hide of the Nemæan monster—seems to me far less mythical than most of that hero's attributes. Again, too, I need scarcely remind my audience of the numerous allusions to this animal which are to be found in Homer, nor of the statement of Herodotus respecting the existence of lions in Thrace, and the ravages they committed there on the camels of Xerxes. I hope I shall not be supposed to affect a classical knowledge I can only admire in others, but, speaking merely as a zoologist, I see no objection to the story."

The essay, however, is not generally of this apocryphal character. As a novelty in science, however, or at any rate a recent and most interesting discovery, the occurrence of bones of the water tortoise in Norfolk may be cited: they were found at a place called West Mere, a few miles from Thetford, and consequently very near to Mr. Newton's residence, and belonging to Mr. Birch, of Wretham Hall:—

"In this mere there was ordinarily about four feet of water, and beneath it about eight feet of soft black mud, partly held in suspension and requiring to be removed in scoops. When the mud was being cleared out a great number of bones were discovered, chiefly deposited, as from its semi-liquid nature might have been expected, at the bottom. They were nearly all those of the red deer (*Cervus Elaphus*) and the now extinct Bos longifrons; but among them also was the upper part of a goat's skull, with the horn-cores and the skull of a boar or pig of some sort. Near the centre of the mere, lying below the black mud, was found a ring or circular bank of fine white earth, sufficiently solid to allow Mr. Birch to ride upon it without yielding to the weight of his pony; indeed it seems to have been about as firm as average sea-sand when damp. Outside this ring the bottom of the mere was so soft and deep as to be almost impassable until the mud was cleared away. The ring or bank was some twenty or thirty feet across, a foot wide, and about four feet in height. Not far from its inner circumference was a circular hole, about four feet and a half in diameter, some six feet deeper than the bottom of the mere, and, as my informant states, almost like a well to look at. The mud it contained was even softer than that elsewhere. This was marked out by a circle of stout stakes, or small piles, apparently of alder (*Alnus glutinosa*), and it bore traces of having been wattled. It was not in the centre of the ring, and between the two circles were the remains of a wall, composed of flints packed together with marl or soft chalk. In the same place was some earth of a bright blue colour, which, when dried, crumbled to powder, and was not preserved, though there are traces of it on some of the bones. In this interspace a still greater number of bones were found, and also the remains of a rude ladder, but in such a state of decay it could only be pulled out piecemeal. Still enough of it was seen by Mr. Birch *in situ* for him to have no doubt as to its original form. Its sides were about fifteen inches apart, and its rounds about the same distance from one another. The stakes appear to have been riven from trees some four inches in diameter. They were very hard, as heavy as stone, and of a dark gray colour. The fragments of the ladder, on the contrary, were very rotten and light, but the remains of both, after being kept some time, exfoliated and crumbled entirely to dust. In and around this ring there lay, as I have said, a vast number of bones, of which no small portion were the upper parts of the skulls of Bos longifrons, with the horn-cores attached, and many antlers of the red deer, either entire or in fragments. All the former, excepting one unusually large example, had a fracture in the forehead. I believe that hitherto no decisive evidence has been adduced to prove that in England the long-fronted ox was contemporary with man, but the appearance of these skulls removes all further doubt on that subject, and corroborates the conjecture put forth several years ago by Professor Owen, that this species was probably domesticated by the aborigines of Britain before the Roman invasion. Of the deers antlers some have certainly been shed in the due course of nature; others, on the contrary, have been separated from the head by sawing, as is conclusively shown by a specimen in the possession of Mr. Birch. In this case the operator, probably through inadvertence—for the corresponding portion of the fellow antler bears no such trace—first set to work at this bone above the 'burr' or junction with the skull, but after a few strokes with his tool, he seems to have thought better of it, and finished the job by cutting off a portion of the skull with it. To what use these bones have been put I do not take on myself to suggest, nor is that in accordance with my present object. It may not be uninteresting to compare the excellent handiwork of this early British sawyer with a much more recent though still ancient bit of a reindeer's antler, brought by me from Lapland, where it formed one of a large collection of similar offerings, now I believe scattered at an old Lapp Altar at Jerisjärwi. In this the marks of some six or seven blows of a hatchet are plainly visible, and testify either to the clumsiness or bad tools of the operator, who probably at last effected his purpose by breaking off the half-severed bone by main force, as the appearance of the surface leads one to suppose. Of the other bones found in West Mere, and I am told there were hundreds of them, most of the larger ones have been fractured at one or either extremity, doubtless in order to extract the marrow they contained. But they have not been split longitudinally, as is the case with the marrow-bones found in the Danish Kitchen-Middens; and we may perhaps infer from this fact that something like the long-horn spoons which we now have for that purpose were in use amongst the ancient *gourmets.* Another bone, and, as far as I can make out, the only one found which presents this peculiarity, has been polished on one side, but the reason why is not very obvious, unless it has served, as I before suggested in the case of a similar specimen, for a skait. It appears to have belonged to the long-fronted ox, and my motive for referring to it, as well as dwelling upon these other circumstances, is only to strengthen the truth of Professor Owen's conjecture, to which I have already referred, as to the probability of that species having been domesticated by former races of men in this country, and hence the possibility of its being the progenitor of some of our modern breeds of cattle. I must add that no weapons or implements of metal, which can be referred to a period at all remote, were brought to light in this or any of the adjoining meres, but a great number of flint disks were found, which, according to the description I have received (for unfortunately none of them seem to have been preserved), must closely have resembled those known to the Danish antiquarians as 'sling-stones,' from the probable use made of them."

But I must quote the particular passage to which I have alluded, touching the water tortoise. This pretty and hardy chelonian might without difficulty be introduced into our ornamental waters in England, as it endures the rigours of a continental winter without any apparent injury, being firmly established not only in the South of France, Italy, Hungary, Greece and Turkey, but extending its range northwards to Austria, Silesia and Poland. In company with Emys caspica it frequents Dalmatia and the shores of the Caspian, and is found in friendly relations with the minute Emys Sigriz in some of the table-lands of Spain.

"Some weeks since, when examining the large collection of ancient remains in Mr. Birch's possession, all of which were, I believe, found on his estate in Norfolk, I found, to my surprise, some specimens far more interesting than any I had expected to meet with. They consist of some limb-bones and a considerable portion of the dorsal and sternal shields of two individuals of the European fresh-water tortoise (*Emys lutaria*), a species the existence of which at any time in the British Islands has never before been suspected. These were found, as a label upon them in Mr. Birch's handwriting testifies, so long ago as June, 1836, in a peat-bog, by the side of a spring-pit, at East Wretham, about seven feet below the surface, and beneath some fifteen hundred laminations of a species of Hypnum, specimens of which were, I understand, submitted by Mr. Birch to Sir William Hooker, who declared the species to be Hypnum filicinum. I immediately communicated these facts to Professor Owen and Professor Bell, as being respectively the highest authorities on the fossil and recent reptiles of this country; and subsequently sent the remains to the first-named gentleman, who kindly determined the species for me, thereby confirming the view I had taken of them, but adding that they were somewhat larger than modern examples from Germany, now in the British Museum. Now, I am told that no trace of testudinate remains has been previously observed in England, in any formation of a later date than the London clay, certainly not in any post-tertiary deposit. I therefore think I am justified in presenting them to your notice, as being especially worthy of attention. But this is not my only motive for so doing. I am anxious to point out, in this instance, another of the many coincidences which existed in days of yore between the fauna of Ancient Britain and the faunas of the continental countries nearest to our island."

The concluding words of this passage are scarcely to the point, this pretty tortoise never having been found in the North of France, Holland, Belgium, Denmark, Sweden or Norway.

On the subject of the northern penguin, the great auk of our British lists, Mr. Newton cites from Steenstrup's admirable 'Monograph' several passages of great interest; and these, in continuation of the delightful paper I have already reprinted in the 'Zoologist,' will form a very complete history of this truly extraordinary and now probably extinct bird.

"But the species which is supposed by many ornithologists to be now extinct was formerly very plentiful on both sides of the Atlantic, and even on some islands suited to its necessarily peculiar habits around our coast. The statement of its breeding on St. Kilda, which has been often quoted, is very circumstantial; and in Orkney there are still persons living who remember it as a native bird, a fact by no means extraordinary, when it is known that the last example observed there was killed in 1812, and its skin sent to Mr. Bullock, at the sale of whose collection it was bought by Dr. Leach for the British Museum, where it may now be seen in very fair preservation. A few of its bones have been discovered in the Danish 'Kitchen-Middens,' and this circumstance has led Professor Steenstrup to publish an excellent little monograph on the species. Herein he has most carefully collected the notices concerning it which exist in the narratives of old voyages to Newfoundland and the Gulf of St. Lawrence. And notwithstanding that it may be perhaps somewhat departing from the scope of a paper professedly on European Zoology, I hope it will be permitted me to mention a few of these here. For though most of them are drawn from sources originally published in England, they have never been collated by English naturalists, and they represent a state of things similar in all probability to that which once existed in many localities along the western shores of Europe.

"In 'The voyage of M. Hore and diuers other gentlemen to Newfoundland and Cape Briton in the yeere 1536,' &c., it is stated:—

"'From the time of their setting out from Grauesend, they were very long at sea, to witte, aboue two moneths, and neuer touched any land vntill they came to part of the West Indies about Cape Briton, shaping their course thence Northeastwardes, vntill they came to the Island of Penguin, which is very full of rocks and stones, whereon they went and found it full of great foules white and gray, as big as geese, and they saw infinite numbers of their egges. They draue a great number of the foules into their boates vpon the sayles, and tooke up many of their egges, the foules they flead and their skinnes were very like hony combes full of holes being flead off: they dressed and eate them and found them to be very good and nourishing meat.'

"In a letter written to M. Richard Hakluyt, of the Middle Temple, containing a report of the true state and commodities of Newfoundland, by 'M. Anthonie Parkhurst Gentleman,' dated 'From Bristow, the 13th of Nouember 1578,' is this passage :—

"'There are Sea Guls, Murres, Duckes, wild Geese, and many other kind of birdes store, too long to write, especially at one Island named Penguin, where wee may driue them on a planke into our ship as many as shall lade her. These birdes are also called Penguins, and cannot flie, there is more meate in one of these than in a goose: the Frenchmen that fish neere the grand Baie, doe bring small store of flesh with them, but victuall themselues alwayes with these birdes.'

"Again, in 'A report of the voyage and successe thereof, attempted in the yeere of our Lord 1583 by Sir Humfrey Gilbert knight, &c., written by M. Edward Haies gentleman, &c. :'—

"'We had sight of an Iland named Penguin, of a foule there breeding in abundance almost incredible, which cannot flie, their wings not being able to carry their body, being very large (not much lesse than a goose) and exceeding fat: which the French men vse to take without difficulty vpon that Iland, and to barrell them vp with salt. But for lingering of time we had made vs there the like prouision.'

"The passage just quoted is no libel on the French sailors of those days. It is entirely confirmed by the narrative of Jacques Carthier's third voyage. I have not been able to obtain a sight of the original work, and must content myself with the extract as given by Professor Steenstrup. After speaking of the incredible abundance of birds at the so-called 'Ile des Oyseaux,' near Cape Bona-vista, the writer goes on to observe :—

"'Neantmoins il-y-a cent fois plus à l'entour d'icelle, et en l'air que dedans, desquels les vns sont grands, comme Pies noirs & blancs, ayans le bec de Corbeau: ilz sont tousiours en mer, et ne peuvent voler haut, d'autant que leurs ailes sont petites, point plus grandes que la moitié de la main, avec lesquelles toutefois ilz volent de telle vitesse à fleur d'eau, que les autres oyseaux en l'air. Ilz sont excessivement gras, et estoient appellez par c'eux du païs *Apponath*, desquelz noz deux barques se chargerent en moins de demi heure, comme l'on auroit peu faire de cailloux, de sorte qu'en châque navire nous en fimes saler quatre ou cinq tonneaux, sans ceux que nous mangeames frais.'"

It would be idle and untruthful in me to say that Mr. Newton has exhausted this subject, which is one of the highest possible interest; indeed the essay may be designated as suggestive rather than conclusive, appetising rather than satisfying: nevertheless it is a valuable work, as showing the resources of a scientific region hitherto unexplored, the riches of a mine hitherto unworked; and I have great pleasure in most cordially recommending it to the notice of my readers.

EDWARD NEWMAN.

Curious Habit of the Shrew.—A friend of mine, when shooting by the Ouse-burn, saw some object apparently struggling on the rocky and shallow bed of the burn. At this he fired, and on picking up his game was considerably astonished to find that he had killed a black shrew and a small fish. Probably the fish had been too strong for its captor, as they were apparently rolling over and over in the water, and doing battle with all their energy.—*T. J. Bold, in 'Transactions of the Tyneside Naturalists' Field Club,' April*, 1862.

Occurrence of the Orangelegged Hobby near Hythe.—An adult female of the orange-legged hobby (*Falco rufipes*) was killed at Sandling Park, near Hythe, in the early part of this summer. I saw the bird soon after, but as I believe its occurrence in this instance has not been recorded, I have asked permission to notify it.—*W. Oxenden Hammond; St. Alban's Court, near Wingham, September* 15, 1862.

Curious Capture of a Hobby.—One day last week a labourer brought me a fine adult male hobby (*Falco subbuteo*), and curious enough was his story of its capture. The man (an invalid) was taking a stroll in the church-yard of Chesterton, Cambridgeshire, accompanied by his little boy, who all at once said, "Oh, father, look! what curious bird is that drinking at the pond?" The man made no reply, but crept gently up to the hedge, this side of the pond, and by some manœuvre or other managed to put a walking-stick over its back, and in this manner captured the bird, which turned out to be a hobby. When brought to me it was lively, and, to all appearance, in good health: the man informed me that it ate meat freely. I have since had it preserved, and no appearance of any injury, either externally or internally, was apparent: its plumage was also nicely clean, and in all respects, as far as I could see, a healthy bird. I will vouch for the honesty of the man who captured it. The hobby is with us not by any means a frequent visitant, only a pair or a single bird occasionally occurring. The hobby is a good sportsman, generally making his appearance some time in September, and again retiring about October or November. On reference to my note-book I find I have a note of the capture of the hobby as early as the 12th of August, but these instances are not general. In the field the hobby is a bold and daring falcon, pursuing his prey with astonishing avidity and fierceness. The partridge is his particular favourite: I have always noticed that when seen or captured, it has invariably been in the vicinity of an abundance of that bird.—*S. P. Saville; Dover House, Cambridge, September* 15, 1862.

The Song Thrush singing later than usual.—That beautiful songster, which has been lauded by at least half-a-dozen of our poets, and by Robert Burns particularly, as the "mavis," was heard by me on the 6th and 15th of August,—a most rare occurrence; as the thrush generally ceases about the end of July for three months, it may be attributed to our extraordinary dull weather in June and July making the summer appear late to the bird, the temperature being so cold with the continued rain: the birds were perched on a high elm tree in the vicinity of Cheltenham. I mentioned the reverse in the 'Zoologist' for 1859; in a burning July the same species of birds ceased singing in the middle of that month, every thing being prematurely advanced. The only writer that ever underrated the song of the thrush was my old neighbour and acquaintance the author of 'The Journal of a Naturalist,' and being fond of singing birds it seems singular for him to have done so. Mr. Knapp seemed to think that thrushes had no particular notes, and that every bird had a set of notes of its own; but he did not make allowance for young and old birds, and singing birds are often interrupted in the midst of their tunes, and commence where they left off. He goes on to say, "Harsh, strained and tense as the notes of this bird are, * * * yet they are pleasing from variety." The blackbird he praises for his mellowness of voice, but omits his greatest beauty, plaintiveness: evidently this writer had not a nice musical ear. He mentions one thrush which sang a whole season near his house, which used to repeat "Lady bird, lady bird," but this must have been an old bird with his nest near: the three notes which are mentioned are notes used by every old song thrush, and may as well be sounded "Ti, ti, ne" or "Ti, ti, to," as the fanciful sound of the author in his 'Journal.' Notwithstanding the eccentricity of his opinions, now and then his style of writing is easy and elegant, and his book is a great favourite, having passed through four editions. Thrushes, as I have mentioned once before, sing much louder while nesting—are perched much lower and nearer to their nests in April, May and June—than at other times. When they sing in the third week in October and in December, they may be observed always at a greater distance; but in the breeding season four or five of these birds will frequently sing in opposition to each other close to a dwelling house.—*H. W. Newman, Hillside, Cheltenham; August* 26, 1862.

Number and Eggs of the Dartford Warbler.—As regards the diminution of numbers of the Dartford warbler, I can fully confirm the statement of your correspondent (Zool. 8160), for having met with them somewhat plentifully, as well as their nests and eggs, in 1859 and 1860, I have these last two seasons only had a very few specimens. There is no doubt that the cold winter of 1860-61 nearly destroyed them. I have an interesting series of their eggs, and have seen many more, but cannot agree with your correspondent that they are similar to those of the whitethroat. Mine vary a good deal, but approach more nearly to those of some varieties of the reed warbler; they have, however, I think, always a distinctive character about them which pretty readily distinguishes them from the eggs of any other bird. I think the ground colour being very light, sometimes almost approaching white, and a distinctness of spot, chiefly give this; whereas the reed warbler often has the ground colour more approaching green, and the spots more suffused. I find the spots in the Dartford warbler's egg, moreover, often tending towards a well-defined zone at the larger end, though not by any means universally so.—*Alfred Crowley; Croydon, September* 16, 1862.

Blue Variety of the Chaffinch's Eggs.—Noticing some remarks in your last number about the blue variety of the eggs of the chaffinch (Zool. 8161) I can confirm the view of your correspondent, that they are not of very rare occurrence. I have seen such in several collections, and have them myself of that colour, but with spots.—*Id.*

Nesting of Martins and Sparrows.—Since my residence near Colchester, nearly nineteen years, each spring till the present, successive pairs of martins have built a nest under the broad eaves of the house at the east end, of which, however, when completed, they have not unfrequently been dispossesed by sparrows: on such occasions I have served an ejectment on the dishonest intruders by poking down their usurped dwelling. Last season they constructed their habitation as usual, and, not being disturbed by bad neighbours, hatched three young ones. Either by accident or design the nest was struck by a ball, which demolished it, and the birds, well fledged, descended gently to the ground. The visitor who had caused the disaster carefully collected and placed them on some hay in a bird-cage with a wooden back, and having a door in it, and covered the top and sides with double coarse paper, as a protection from the weather, and hung it up as near as possible to the place where the nest had been. The parent martins immediately commenced feeding the nestlings, which did not appear to be discomposed in their new abode, but often sat in a row on their own door-sill to receive their food. The old birds soon seemed to fancy the opening was too large, for they presently began to plaster it up in a convex form, but did not, in the first instance, close it to the top of the door-way till the young ones took their flight, when they finished the work, leaving only the usual small aperture. They continued to frequent this novel habitation, carrying materials into it, we supposed as a preparation for a second brood, but of this we have no decisive proof, as we all left home soon after, and, being absent several weeks, on our return the hirundine tribes had migrated. On taking down the cage, we perceived an indentation in the centre of the hay neatly lined with feathers, and in several parts of the interior, where air could be admitted between the wires or elsewhere, the crevices were found to be carefully plastered. This spring, in order to ascertain whether the martins would again resort to the cage, it was hung up in the former position, but they did not appear to notice it, and although they were seen to fly once or twice to the old spot, they made no attempt to build as heretofore. In the course of the summer, however, a pair of sparrows, seeing vacant lodgings, viewed them at first with a coy timidity, perhaps suspecting a trick to ensnare them; but, becoming assured, they took possession, probably for a second brood, enlarged the entrance, and filled the cage with the heterogeneous mass of which their nests are ordinarily composed. In due time they reared their progeny, and the house is again to let.—*Joseph Shewell; Lexden Road, near Colchester, August* 27, 1862.

Nest of the Twite.—In Shetland I have repeatedly met with the nest of the twite in walls, both of stone and of turf, in peat stacks, among heaps of stones, in rugged banks of streams, in cavities beneath large stones lying singly upon the ground; less frequently upon ledges or in crevices of sea cliffs; twice in low elders, at the height of about four feet from the ground; once in a rabbit-burrow, once in a hay-stack, and once in the wall of a stable, considerably above my reach. I mention these facts, because the twite is usually described as only building among grass or heath.—*Henry L. Saxby; H.M.S.* "*Devonshire,*" *Sheerness, September* 1, 1822.

Further Notes on the Oviposition of the Cuckoo.—According to Mr. Saxby's account of the hen cuckoo (Zool. 8164) she lays her egg sometimes after the "foster parent bird" has hatched her own brood, so that, according to this new theory, the poor deluded bird last alluded to has to sit her time over again to hatch the stranger's egg. I certainly cannot reconcile this unnatural mode at all, everything in creation being so regular, consistent and beautiful in all its curious ways; the cruelty also committed on the unfledged young of the foster mother seems unlikely: my own notion is that the cuckoo seldom or never selects any nest except one where the hedge-sparrow, titlark, wagtail, or other bird she finds has nearly finished laying the proper number of eggs, and then the cuckoo, from that wonderful instinct implanted in all God's creatures, lays her single egg only in each nest she visits on different days, and probably ejects the whole of the eggs except her own, sucking each of the foster-parent's eggs, if hungry, or getting rid of them with her bill. I can only authenticate one case: when a schoolboy I was on a visit to a near relation in Northamptonshire, when, in company with another boy birdsnesting in May, we found a hedgesparrow's nest, which is the nest most frequently chosen by the cuckoo; the nest contained three eggs, but on visiting the nest again the hedgesparrow was found sitting very closely; a fortnight or rather more afterwards the bird was driven off her nest, and only one egg was there, which was hatched the next day, and turned out to be a cuckoo. I have given a minute account of the rearing of this bird, and placing it in an osier-twig cage, where it lived near the nest until it was six weeks' old; the history of this bird is recorded in the 'Zoologist' for 1852 (Zool. 3424). That the cuckoo is fond of the eggs of singing birds there is little doubt. I once found the nest of a bullfinch with eggs; this nest I intended to take when the young were old enough: I visited the nest every morning, but at the very time when the old bird finished laying, on visiting about 10 A.M. I found a cuckoo sitting almost upon the nest, moving her head downwards: she was driven away, and on examining the nest the whole of the eggs had disappeared, except a few broken fragments of the shells, and although the shells were moist there was no mess made in the nest. It has been often said that as soon as the laying of the singing birds, at the end of June, is over, the cuckoo becomes hoarse for want of suction: how far this is correct it is impossible for me to say; it is probably a vulgar error, but I have heard many times that the voice of a public singer is best cleared by the white of a raw egg. To return to Mr. Saxby's theory of depositing its eggs from the mouth by the cuckoo, I am certainly inclined to agree to that theory, and it agrees with the account given by me this year in the 'Zoologist' of a young cuckoo having been discovered in a robin's nest in a stone wall, and the inhabitants of Norton Court, Gloucestershire, where the occurrence took place, were puzzled to think how so large a bird as the cuckoo could have had access to the nest, the aperture being only big enough for the robins, the foster parents, to enter. The Creator has so willed it that the love of offspring shall be wanting in some of his creatures, and we may say of that extraordinary bird, the cuckoo, what, in the beautiful language of Job, is said of the ostrich:—"Gavest thou wings and feathers unto the ostrich, which leaveth her eggs in the earth and warmeth them in the dust. She is hardened against her young ones as though they were not her's; her labour is in vain without fear: because God has deprived her of wisdom, neither hath he imparted to her understanding." Mr. Saxby says truly that the shy habits of the cuckoo are a great bar to the discovery of its exact history, and I fear that different accounts may verify the old story of the chameleon,—all nearly right. May not the hen cuckoo, after all, employ different modes of depositing her egg according to the exigency of her case, and the situation of the selected nest?—*H. W. Newman; September* 6, 1862.

The Common Sandpiper a Diver.—Some days back I happened to wound a sandpiper (*Totanus hypoleucos*), which, on flying some distance from the rock on which it had been feeding, fell into the water. When my boat approached it, it dived in a most expert manner, perpendicularly, to the depth of five or six feet, then horizontally under water for a long distance and with great celerity, using both wings and feet. It repeated this several times till it reached the rock from which it had flown. I landed, expecting to pick it up, when I was surprised to see it walk down the slanting side of the rock for three feet under water, and then strike out again. When it rose I shot it, and thus ascertained its species. I think it very probable these birds, like the dipper, have a certain power of diving in search of food. Not knowing that these birds dived, I inquired of Mr. Newman for information, and finding the fact entirely unknown to him, I insert this.—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin, September* 4, 1862.

Woodcock breeding near Keswick, Cumberland.— My brother, J. S. Mawson, when out in search of insects on the 24th of June, nearly stepped upon the nest of a woodcock, containing four eggs: the old bird was rising from the nest at the time. My brother continued to visit the nest daily up to the time she hatched, which was on the 7th of July: the old bird allowed him to go within a couple of yards of the nest without being in the least annoyed. The nest is merely a slight hollow in the ground, with a few dry leaves round the sides. The old bird, when sitting upon the nest, always rests the point of its beak upon the ground, with its dumpty tail almost erect, giving it a curious appearance. The nest is upon a dry bank facing the North, which I believe is nearly always the case with the woodcock, the bird preferring the shady to the sunny side of a bank. The eggs are very similar to those of the corn crake, being rather larger and in colour much the same. After hatching, the young birds left the nest almost immediately.—*George Mawson; Gill House, August* 18, 1862.

Occurrence of the Great Snipe near Malham, in Yorkshire.—Two very fine specimens of the solitary snipe (*Scolopax major*) were killed on Saturday last, September 6, by Mr. W. Braysley, at Malham, in this county. The birds were both found on high ground, and almost a mile and a half apart. Mr. Braysley has very kindly given me one of the birds for my collection; it weighed over eight ounces, and was, I believe, a female; the other weighed rather less: both were in very good plumage.—*W. Christy Horsfall; Horsforth Low Hall, near Leeds, September* 8, 1862.

Occurrence of the Black Stork near Hartlepool.—I have just added to my collection a fine specimen of the black stork (*Ciconia nigra*), which was obtained near Hartlepool, within the last few weeks.—*Id.*

How they fatten Ducks in China. By ARTHUR ADAMS, Esq., F.L.S.

A STROLL through the straggling villages on the banks of the Great River is pleasant enough in the spring. Along the level bund Coolies are carrying burdens at the end of bamboos, rich men are riding in couples on wheelbarrows, a little-footed woman is toddling awkwardly along, and there is a shaven priest in a dingy robe.

Inland is seen a vast, green, cultivated plain, with scattered farms and hamlets, and their attendant white goats and hungry yelping curs. An aged crone is usually spinning at the open door, the ducks are in the dykes which always encircle the houses, and in the elm and willow trees are the familiar magpies and mina-birds.

The fields are now dry; rice, padi-birds and frogs are gone; not even a land-crab sidles along the muddy banks. All around the yellow blossoms and snowy pods of the cotton are mingled with the foxglove-flowers of Sesamum, from the seeds of which an oil is expressed; wheat and barley form undulating fields, together with purple tares and sweet-scented flowering beans. A granite arch, dedicated to filial virtue, often rears its quaint form above the cotton, and everywhere wooden coffins are seen exposed in the open air; the grassy grave-mounds are yellow with Chrysanthemum Chinense, from which you note the sibilant song of the grasshopper-lark; the pheasant crows in the young corn, and the pretty ring dove flies across the path to join her mate in the bamboo thicket.

The banks are covered with violets and dandelions, mixed with patches of yellow Thaumatopsis, and, what is rare in these southern latitudes, with the blue flowers of a little gentian.

In this scene of smiling plenty the people are calmly industrious, tending their goats, weeding the crops, or threshing out the last year's padi; the women are busy among the cotton plants; the men are turning the sod and crushing the clods with their heavy four-pronged hoes, and the children are gathering esculent leaves.

On what, however, is he intent who, basket on arm, surveys the willows with inquiring eye? By means of a little sickle at the end of a long bamboo, he ever and anon detaches brown swinging cradles from the slender boughs, and deposits them in his basket. This is a pupa gatherer, and those tiny mummy-like objects of his solicitude are the pupa-cases of a species of Oiketicus. When I blandly desire to know the use these accumulated larvæ are to be put to, the face of the old man relaxes into a smile, and he transforms himself suddenly into a duck, gobbling up imaginary Oiketicus larvæ with impatient greediness and noise.

This is one way in which they fatten ducks in China, but there are several others. In the beginning of summer, when the Principia utilis, which in winter time is nothing but a tangled mass of green thorns, teems with milk-white flowers and swarms with bees; when the edges of the narrow paths are gay with the white and pink coronals of Anthyllis, about which wasps are vigilant and bustling; when in all waste places the blue flowers of Veronica mingle with the milk-white stars of Stellaria, and in the far distance a puce-coloured mass of peach-blossoms contrasts with the green willows; when those long-beaked hairy flies, the Bombylii, hover over the hot narrow paths, like so many liliputian humming birds, and yellow-legged bees settle on the sun-bright spots,—then you are startled in your walks by strange guttural noises, which seem to come from beneath your feet, but which proceed in reality from the Iris leaves which margin the river's brink.

There, moored in some secluded shallow spot, is seen a long roofed boat, shaped like Noah's Ark, with a sloping board leading into the reeds and sedges. A little boy watches all day long his greedy charges, keeping them in order by means of a slender wand with a bit of rag at the end. At daybreak down swarm the ducks into the frog-peopled swamp, and at sunset they are driven back, and waddle up the ladder to their house to roost.

There is a wide marshy plain at the junction of the Woosung and Yang-tsze rivers, with mud flats stretching away for miles. Here the uncouth buffaloes delight to wallow in the ooze; the white padi-birds stand in a row at the edge of the water; and far in the distance, like a sentry at his outpost, watches the gray solitary heron. A flock of teal settles down in the water, and the sparkling surface of the river is dotted with brown-sailed junks. A vole or a field mouse sometimes runs across your path, or the gliding form of a snake is seen vanishing in the grass. Towards evening frogs are demonstrative, and assert themselves; they croak loudly and without cessation, and leap by hundreds down the banks of the dykes and streams. Now these merry Batrachians are good for ducks, and Chinamen are particularly fond of *fat* ducks. The natural result is that at this "witching hour of night" silent boys and old patient men are seen in these frog-haunted precincts, a long bamboo rod in their hand and a string baited with a worm, angling for frogs! In my homeward walks, when the brown owl swoops down and settles on the cotton fields, and the huge black Copris flies across my face, I often fall in with an old man bending under the weight of a hamper of frogs, the produce of his evening's fishing.

ARTHUR ADAMS.

Shanghai.

Occurrence of rare Birds near Worcester.—At the commencement of the present shooting season a fine specimen of the hoopoe was shot by Mr. Pardoe, of the Yew-tree Farm, near Ombersley, in this county: it was stuffed by Mr. Brooks, of this city, in whose care it is at the present time: I was informed that another was seen in the same neighbourhood, and is being sharply looked after. About twenty-five years ago I saw one that had been shot near the Trench Woods, about seven miles from Worcester, and between that period and the present another was killed, I have ascertained, at another place about the same distance from this city, and is in the possession of Mr. J. Freeman, of Gaines, near Bromyard. But few rare species have been met with latterly in this county. Three or four years ago a fine specimen of the pied flycatcher was killed at Ombersley, and also a beautiful gray phalarope was shot upon a pond near Martley, in this county, both of which fell to my lot and were added to my collection. During the last winter upwards of a dozen hawfinches were shot near and about this city,—a very unusual circumstance: one was killed in the garden of Sir Charles Hastings, a very central part of the city. Two years ago three tippet grebes were shot upon the lake at Westwood Park, the seat of the Right Hon. Sir John Pakington, Bart. Several large spotted woodpeckers have been killed in Worcestershire during the last three years, two of which came into my possession: I saw one that was a very beautiful and remarkable variety, having the scapular feathers and a portion of the back feathers of an intensely rich brown colour: I am sorry to say that my endeavours to obtain it were quite unsuccessful.—*Abraham Edmunds; The Tything, Worcester, September* 15, 1862.

The Lizard Snake in the Zoological Gardens.—In the last number of the 'Field,' under date of September 13, 1862, is a notice by Mr. F. T. Buckland of the capture of a specimen of the lizard snake (*Coronella austriaca*) in Hampshire, by Mr. Fenton, of the Royal Military College, at Sandhurst. The specimen was presented to the Zoological Society, and is to be seen, enjoying life and health, in the reptile-house in Regent's Park, where it occupies the fourth division from the end on the right side of the house. The most interesting part of Mr. Buckland's communication is the following letter from Dr. Gunther, confirming so entirely as it does what has been so repeatedly stated of the food of this reptile:—"A large male specimen of Coronella lævis, which I kept for a long time on account of its tameness, fed exclusively on lizards, never on mice or frogs. After having fed it for some time with ordinary-sized lizards proportionate to the size of the snake, I brought a very large specimen of Lacerta agilis to its cage, in order to try the strength of the snake. The lizard was immediately seized, but after a long fight, during which the lizard several times appeared to be entangled in the writhings of the snake, always managing, however, to free its head, which had been seized by the snake, the latter changed the point of attack, and got hold of the tail of the lizard. This of course broke off, and was devoured by the snake. From this time the snake always seized the tails of the lizards given him for food, without further attacking them, nor, if tailless lizards were put to him, would he attempt to devour them." Dr. Gunther adds that the lizard snake is a local species all over Germany and France, and in some places is by no means scarce; it frequents only dry places where lizards are found: it abhors marshy ground: it is a ferocious brute, but easily tamed." Mr. Buckland introduces his notice by announcing that "a new kind of British snake has been discovered," and repeats that it is "an entirely new British snake:" this is a manifest mistake: for the last three years the snake has been universally admitted as British, the earliest notices of its occurring in Britain being by Dr. Gray (Zool. 6730) and Mr. Bond (Zool. 6787).—*Edward Newman.*

Variety of the Turbot.—I saw in Truro fish-market, on Saturday last, a curious variety of the turbot, as to colour: the whole surface of the upper and lower parts were of an uniform dark grayish brown, the under parts in no respect differing in tone of colouring from the dorsal surface. It was a two-thirds sized fish, and in very fine condition.—*Edward Hearle Rodd; Penzance, September* 8, 1862.

Characters of a supposed new Cyclas.—Having found a form of Cyclas in Battersea Fields, with which I was unacquainted, I showed it to several friends, to whom it seemed equally new, and as it does not entirely answer to any description that I have had the opportunity of seeing, I have endeavoured to give such an analysis of it as my inexperience enables me to do. The shell is small, very tumid, almost spherical, edges blunt, hinge ligaments not external, umbo produced, finely, deeply and regularly sulcated, occasionally iridescent, the colour also occasionally interrupted, as may be often seen in C. rivicola. The hinge-margins are not at all winged as in the typical form C. cornea. Colour, when young, yellowish horn, but becoming darker with age until it assumes a greenish olive with a yellow margin. Animal:—foot extremely long and narrow, perfectly white, no appearance of flesh-colour in any part; siphonal tubes rather short, dark yellowish brown; oral tube darkest and longest, not fimbriated, but jagged irregularly. In comparison with its allies it is dull and inactive in its motions, and in confinement appears to be exceedingly shy and nervous, withdrawing into its shell upon the slightest motion of the containing vessel, and I have even thought at times that those I had in confinement were aware of the approach of an opaque object toward the side of the small glass globe in which I kept them. The fry, both when expelled and in the matrix, were as large as from a large example of C. cornea. It differs from C. cornea *var.* nuclea in being more spherical and the umbos more produced. C. cornea *var.* flavescens I have not at present by me, but my recollection seems to be that the shape was more rhomboidal. Habitat:—ditches or field drains, black and somewhat fœtid mud. The accompanying shells were Planorbis cornea, P. contorta, P. complanata, P. vortex, Limnæus periger, and a single example of Cyclas calyculata, but without the umbonal appendage. It may be nothing new; if so I have only to offer my apologies, and plead my inexperience to yourself and your readers.—*John E. Daniel; 10, Taigon Terrace, Clapham Road, London, S., September* 5, 1862.

Capture of a Recent Belerophina in the Indian Ocean.—The capture of a recent species of Belerophina, a genus imagined to be only found in a fossil state, and the representative of those great extinct Cephalopods which formerly disported themselves on the surface of primeval seas, must be an event worthy of record in the 'Zoologist.' During the monotony of long tedious voyages trivial objects are often invested with a strange fictitious interest. The otherwise unoccupied mind finds a dreamy pleasure in contemplating the few organic phenomena which present themselves. The vigorous leap of the Bonitoes, and the glittering bodies of the flying-fish as they drop exhausted one after the other into the water; the huge rolling bodies of unwieldy flack-fish, their dark skins rough with barnacles, moving through the water; the pretty white boatswain-bird, with his marline-spike of a tail, hovering round the glittering vane at the main-mast head; the azure glint of the dolphins shining through the deep pellucid water; a passing ship; the capture of a shark; a patch of floating gulf-weed, with its colony of sailor-crabs and little fishes; the spar of some lost ship, white with clustering barnacles; the clouds, the water-spouts, the changes of the wind, are all so many incidents which are viewed and watched with absorbing interest. About one hundred miles from Java Head it is nearly a calm. A huge tree, torn by some tempest from its native forest, comes drifting by the ship, hoary with clustering Lepades and with swimming-crabs clinging to it, as shipwrecked mariners to a raft. Anxious about the barnacles, short-handed trunk-fish keep close alongside, making sudden onslaughts upon the helpless Cirrhipedes; a shoal of bright green parrot-fish hover in the rear; more lustrous still, three blue sharks dart about and around. In the distance a school of brown Cetaceans, round-backed and long-nosed, comes coursing along,—vaulting head downwards they wantonly pursue each other. On they go by fifties and by hundreds, leaping, tumbling and dashing the spray about, so as to cause the mastheadman to sing out from aloft, "Something like breakers on the starboard-bow." The whole surface of the water is alive with those fragile lesser forms of being which constitute of themselves a peculiar pelagian faunula. You see the blue vesicle of Physalia and the indigo disk of Porpita; the pellucid bells and globes and mushroom bodies of the Acalephæ, and the glassy shrimps, Erichthus and Alima. When, by means of a towing-net, these are assembled together in a vessel of sea-water the interest is doubled, for now we begin to discern the erratic evolutions of the Entomostraca, the steady progress of the small cerulean Pontia, and the skeleton-form of long-eyed Leucifer. These move almost invisible among the equally pellucid Sagittæ, true arrows darting, as their name implies, with rigid bodies through the water. And now uprise with flapping wings the globose Cavolinæ, and Styliola in her tube-like shell. But what, amid these varied examples of oceanic life, is that tiny floating bubble? It is nautiloid and yet no Nautilus, nor is there any keel to constitute it an Atlanta. It is a recent Belerophina!—*Arthur Adams.*

Temperature of Snails. — M. J. B. Schnetzler has been experimenting on the temperature of the terrestrial mollusks, and has arrived at some interesting results, which are recorded in the 'Bulletin Scientifique.' He began with the Helix pomatia, the large pale fawn-coloured snail, not uncommon in our lanes and woods, and which is considered fine eating by epicures abroad. In April, 1861, when the air was 12°.1 cent., a snail of this kind was a little warmer, 12°.5. In June, when the air was 23°.7, the thermometer, when covered with the snail's foot, rose to 24°.7. A few days later, when the thermometer stood at 18°.7, it rose on being introduced into the snail-shell, and brought as near to the respiratory cavity as possible, to 20°. Irritating the muscles of the animal gave a further rise of ·75. In July a lively Helix pomatia, by mere contact of its foot, raised the thermometer 2½ centigrade degrees.* Half an hour later the air rose one degree, but the snail remained the same. In September, after some snails had closed their shells for a month, a shower of rain came, and although they were kept in a room they woke up, but their temperature did not exceed that of the surrounding air. In January he placed two snails in the open air, having removed their operculum. During the night the temperature fell to 2° cent., but they were not injured; on a subsequent night at 8° they froze and died. Slugs have a lower temperature than snails. M. Schnetzler proposes to call these creatures "animals of variable temperature," in contradistinction to mammals and birds, whose temperature is generally more equal, if we except the changes which hybernating Mammalia undergo. Mollusks may become colder than the air by evaporation from their skin, and Dutrochet found that frogs became noticeably warmer in air saturated with aqueous vapour, and, consequently, suspending their evaporation. —'*Intellectual Observer' for September*, 1862, p. 146.

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* A degree of Fahrenheit is equal to five-ninths of a degree of the centigrade scale.

Note on the supposed Discovery of a New British Mygale (Zool. 8172). — Mr. Robertson is evidently in error in recording the discovery of Dysdera erythrina, as a species new to Britain. If Mr. R. will refer to Zool. 6501 and 7563 he will see that it is there recorded by myself as "common under stones and rocks at Portland," and "rare on Bloxworth Heath, Dorsetshire." I have, since thus recording it, received a specimen from a London cellar, where it was captured, and kindly sent me by Mr. Edwin Shepherd, of 176, Fleet Street, and also from Mr. F. Bond, of Kingsbury, where he meets with it occasionally in his greenhouse. Moreover, these records by myself are by no means the earliest of its having been noticed as a British species, for Mr. Blackwall notices it (Linn. Trans. vol. xix. p. 128) as having been found in Manchester before the year 1835, and in that year at Cambridge. Subsequently also, in the 'Annals and Magazine of Natural History,' Mr. Blackwall says he has received it from Oxford, and that "Mr. Walker has met with it on the south coast near the sea-shore." Supposing that Mr. Robertson's spider *is* Dysdera erythrina, he is again in error in calling it a Mygale; Walckenäer, in his 'Insectes Apteres,' places it directly *following* the Mygalidæ, and, in my opinion, rightly so; Mr. Blackwall, however, conceiving that its normal number of eyes (six, instead of eight as in the Mygalidæ) should have greater weight than Walckenäer gives it, places this species at the head of his second great division of the Araneidea, based exclusively on the number of the eyes, and called "Tribe Senoculina;" so that in his arrangement the family Mygalidæ is the first, and that of the Dysderidæ nearly the last on the list (see Linn. Trans. vol. xviii. p. 601, where Mr. Blackwall gives his reasons for this, his primary division of the Araneidea). *Is* Mr. Robertson's species Dysdera erythrina?—*O. Pickard-Cambridge; Bloxworth, September*, 1862.

Jumping Spiders. — Has it been ascertained by what means the jumping spiders are enabled to regain their hold when springing at a fly on a perpendicular surface? The direction of the spring must be more or less away from the face of the wall or window pane; gravitation would draw the creature downwards, and the attraction of matter for matter (which has been suggested) is not found, in practice, to influence light bodies dropped close to the face of a wall. May it be that a thread is attached to the holding-ground at the moment of the spring, which, by tightening, brings the spider back to the surface?—*George Guyon.*

New Group of Parasitic Crustacea.—Dr. Fritz Müller describes parasites of crabs, to which he gives the name of Rhizocephala (root-headed). He says, "The head of these apparent worms, which is inserted in the body of the host, emits roots like those of plants—hollow tubes, which, being much ramified, cling round its intestines, and their brood holds a middle place between that of the Lerneæ and the Cirripedes." The parasite of the Porcellana he calls Lernæodiscus Porcellanæ, and that of the hermit crab Sacculina purpurea. Further details will be found in 'Wiegmann's

Archiv,' 1862, or 'Annals of Natural History' for June. —'*Intellectual Observer*' *for August*, 1862, p. 67.

Lepidoptera captured in 1862. — I have captured the following Lepidoptera during the present summer. The universally common species are of course omitted; of those marked * I have duplicates. In spite of the absence of sunshine many of the day-flying species were extremely abundant, especially in Ireland. Sugar I have found generally unproductive, contrary to my experience of former wet summers.

*Leucophasia Sinapis, *Chortobius Davus, *Thecla Betulæ, *Zygæna Minos. All abundant in the West of Ireland.

*Lithosia aureola.

*L. caniola. I have again had the pleasure of taking this novelty on the Irish coast. It flies softly soon after sunset, and again at dawn; it also comes sparingly to sugar. The larva is probably not exclusively lichenivorous: there is very little either of lichen or moss on the ground where the moth occurs; and Dr. Knaggs, who has succeeded in rearing it from the egg, informs me that in confinement it feeds freely on clover.

*Orgyia fascelina. Larvæ abundant in May and June, on sallows on the sand hills at the mouth of the Mersey. The perfect insect appears to have very retired habits: I have never met with it at large.

*Lasiocampa Trifolii, *Nyssia zonaria, *Leucania littoralis, *Eubolia lineolata, Rhodaria sanguinalis, *Agrotis corticea. All abundantly on the Lancashire and Cheshire coast.

*Mamestra albicolon, *Agrotis cursoria, A. præcox. Same localities, but much rarer than in former years.

*Agrotis Ashworthii. At sugar, Llangollen.

A. lunigera, *A. Lucernea, *A. porphyrea, *Mamestra furva. At light and sugar, on the Irish coast, occurred freely.

Cucullia Chamomillæ. At light, same locality. An addition to the Irish list.

Dianthœcia Nisus. On the Irish coast: occurred in June and again in August; whether a second brood, or only stragglers of the June brood, I am uncertain.

*Xylophasia scolopacina, *Apamea connexa, *Euperia fulvago, *Amphipyra pyramidea, *Erastria fuscula, *Bankia argentula, *Hydrelia unca. At Killarney (the three last-named in profusion), in June.

Cymatophora fluctuosa. One specimen floating in a ditch at Killarney, June 20th. New to the Irish list.

Macroglossa Stellatarum. A specimen taken at midnight, June 18th; attracted to the lantern of a lighthouse elevated 130 feet. This seems a novel habit, and an unusual hour for this insect to be on the wing.

*Fidonia conspicuata. Bred from eggs kindly sent by Captain Russell, from Suffolk.

*F. brunneata.

Botys terrealis. At Llangollen, sitting on rocks.

*Sericoris littorana. Irish coast, June and August.

*Spilonota amœnana. Abundant on Cheshire sand hills, July.

Eupœcilia albicapitana. (See 'Annual,' 1862). Irish coast, June.

Scopula ferrugalis, Ephestia elutella, Semasia rufillana, Cochylis Francillana. Not uncommon on the coast near Dublin, August.

Among my captures in Ireland, during June, is a Noctua which does not appear to be referable to any known British species: it belongs to Dianthœcia, or some closely allied genus. Mr. Barrett has also a specimen of the same insect, captured by him in 1861, in the same locality.—*Edwin Birchall; Birkenhead, August* 25, 1862.

Occurrence of Argynnis Lathonia at Swanage. — A lady in this village kindly allowed me to examine a few specimens of British Lepidoptera taken at Swanage, in the summer of 1852, by her nephew, Mr. R. W. Barlow, then a boy twelve years of age. Amongst them I immediately recognized a pair of that rare butterfly Argynnis Lathonia, and of which, in your 'Natural History of British Butterflies,' you only record two captures. That these are genuine British specimens there cannot be the slightest doubt, but unfortunately one has lost a hind wing; the other is, however, a fair specimen. If you would like to see the perfect specimen, and could suggest a means of sending it safely, I would forward it to you for examination.—*Henry Reeks; Thruxton, Andover, August* 30, 1862.

[In answer to my correspondent's kind offer of sending a specimen, I replied that I should like to have an opportunity of examining it: it was therefore most promptly transmitted to me, and is most certainly an example of Argynnis Lathonia.—*Edward Newman.*]

Singular Variety of Pamphila Comma. — On Monday last I captured a beautiful variety of Pamphila Comma, an insect which has occurred here more plentifully this year than I ever remember it to have occurred before. My specimen has its fore wings milk-white, while the under wings are of a delicate green colour; the silver spots shine through on the upper side like gold. I should feel most happy to show this beautiful specimen to any entomologist who takes an interest in varieties.—*W. E. Parsons; New Road, Aylesbury, Buckinghamshire, September* 6, 1862.

Occurrence of Deilephila Lineata at Herne Hill.—I met with a very beautiful specimen of this insect on the 29th of April last, in our garden here: it was at rest near the edge of one of the beds, and looked as fresh as though it had just come out.—*W. J. Wild; Herne Hill, September* 16, 1862.

Occurrence of Sphinx Convolvuli at Cambridge.—This species has this year again made its appearance at Cambridge. I have heard of several specimens having been seen and one or two captured. An old woman brought me a fine male which she said she caught sitting on the palings of the houses at Park Side, Parker's Piece: when brought to me it was carefully wrapped up in a great piece of paper, so that when exposed to view it was in a rather dilapidated condition. At uncertain intervals this locality is rather prolific in this species, generally making its appearance some time in September, and again retiring about October or November.—*S. P. Saville; Dover House, Cambridge, September* 15, 1862.

Occurrence of Sphinx Convolvuli near Bury. — A fine specimen of the above species was brought me on the 8th inst., having been found by two little boys on the pavement in Peel Street, Bolton Street, Bury, Lancashire. The insect was in excellent condition, but has since been spoiled by an unfortunate accident. — *T. Pollitt; Gigg, near Bury, September* 24, 1862.

Occurrence of Chærocampa Celerio at St. Leonard's-on-Sea. — A fine fresh specimen of the above insect flew into the workshop of a shoemaker in this town on Friday afternoon, the 12th inst., and was captured by one of the workmen, and brought to me alive and uninjured.—*Robert Kent; St. Leonard's-on-Sea, September* 14, 1862.

Zygæna Minos in Ireland: the Extermination Question.—Zygæna Minos was in great profusion in Ireland this summer, but did not appear until the first week in July, being fully a fortnight later than in the hot summers of 1858 and 1859. I hear it has also occurred on the west coast of Scotland, but not having seen any of the specimens I cannot speak as to their identity with the Irish insect. It is gregarious in its habits to a singular degree: you may examine twenty of the stony fields so characteristic of the west of Ireland, all apparently alike in vegetation and aspect, and not see a specimen except in one, but that one field will be positively crimson with this beautiful moth. Much has been said about the extermination of insects, from their wholesale capture by collectors,—more, I believe, than the facts warrant,—and though I sincerely join in reprobating any needless taking of life, I am inclined to doubt whether it is in our power seriously to diminish the number of many insects by the mere capture of specimens. As some evidence of this, in the case of Zygæna Minos, I may state that I have taken from one rocky field, of perhaps fifty acres in extent, upwards of 2000 specimens during the last five years, and that the insect was this summer more numerous than ever on the same ground. A female Z. Minos will lay about 200 eggs, so that after all my captures only amount to the produce of ten moths for one season, and has probably had no appreciable effect on the numbers of the insect. The destruction of woods, the alteration of the character of the soil and its vegetation by drainage, and the encroachments of human habitations, are far more fertile sources of destruction to insect life than the ravages of the collector; but I do not think that man, either directly or indirectly, is by any means one of the most powerful agents in the extermination of species, though no doubt his sword weighs when thrown into the scale. There seem to be not unfrequently causes at work which determine the scarcity of one species and the abundance of another closely allied in habit, which are quite inappreciable by us; for instance, the common Burnet moth (*Zygæna Filipendulæ*) occurs on the same ground as Z. Minos, but in vastly smaller numbers, probably not one Z. Filipendulæ for fifty Z. Minos. Who can say why an insect of such hardy habits and universal occurrence has not been able to get a stronghold in that locality, or what special enemy has put so effectual a check on its increase? I can honestly say *I* have not hurt a hair of its head. The difference of habit in Z. Minos and Z. Filipendulæ would seem to favour the latter insect, Z. Filipendulæ forming its cocoon on the stem of a plant safely elevated above the effect of the almost perpetual rain of the west of Ireland, whilst the cocoon of Z. Minos, placed at the roots on the surface of the ground, must frequently be under water, and would seem to be more exposed to the attacks of prowling beetles. Can it be that some insects are like some opinions,—more apt to thrive under a little wholesome persecution than when quietly let alone?—*Edwin Birchall; Birkenhead, September* 16, 1862.

[I very much agree with my correspondent's remarks on the extermination of species by the hand of man: as instances I may cite Nematus ventricosus (the gooseberry grub) and Pieris Brassicæ (the large white butterfly), to destroy which man's ingenuity and industry have been taxed in vain: it is a different thing when man destroys the habitat, drains a bog, empties a pond or converts the heath into a cornfield; then the pabulum of life is gone, and life goes also.—*Edward Newman.*]

Description of the Larva of Melanippe procellata.—A number of eggs of this species were kindly sent to me by a friend at Brighton, about the end of July last. They hatched almost immediately, and the following is a description of the full-grown larva:—Head flat, buffish brown and slightly hairy; on the head are two reddish lines, which unite, forming, with the apex of the head, a distinct triangle; these are bordered by two other lines of the same colour, which approximate, but do not join at the second segment; commencing at this point are two lines of a burnt umber colour, which continue, more or less distinctly, down the back to the anus; within these is a finer line, as far as the fourth segment, of the same colour; this is followed by a distinct and intensely black spot; there are five of these spots, and the line uniting them is also black; the remainder of the line is a rich ochreous-brown, very clearly defined. In addition to the spots already named are others, very minute, deep black and surrounded by a white ring. The ground colour is dull whitish clay, more or less mottled, but the four posterior segments are much paler, almost white. The caterpillar, which is about an inch and three-quarters in length, tapers towards the head, and lies pressed close to the stalk, gauze, &c.: it feeds on the common clematis, and grows rapidly.—*Joseph Greene; Cubley Rectory, Doveridge, Derbyshire, September* 1, 1862.

[The reader is referred to my description of the same larva (Zool. 7252).—*Edward Newman.*]

Description of the Larva of Angerona prunaria.—The larvæ, from which the following description is taken, were beaten from clematis last autumn, at Woodbridge, in Suffolk; they consequently hybernate. Lead-colour. On the third segment a black dorsal line, which, on the fourth and fifth segments, dilates into a black blotch; in the centre of this and the next segment are two *raised* black spots; on the eighth a dark triangular mark; on the ninth a dark double-pointed protuberance: this is followed by two more raised black spots, and on the twelfth two more. The sides are mottled with dark shades and lines. Length two inches. During the autumn they fed on clematis as long as it lasted; they then fortunately ceased feeding, and in the following spring set to work on honeysuckle. It is a slow eater. The pupa, which is black and enclosed between two leaves, much resembles that of Ennomos illunaria.—*Id.*

Description of the Larva of Ourapteryx sambucaria.—The larvæ were taken at the same time and place as the above, and, like them, hybernated. It is difficult to give anything like a comprehensible description of them. General appearance long, slender and rigid, the ground colour being clay-brown. Head an exact representation in miniature of a "pork-pie" hat. On the sixth segment are two lateral protuberances; on the tenth a small dorsal one. The last pair of legs (or whatever they ought to be called) are very broad and flat; in fact, it may be gently insinuated that they are decidedly "splay," and extend to a considerable distance from the body. Two sharp points protrude from the anus. The position when at rest is very peculiar: it lies rigidly extended from the anus up to the fourth segment, when it suddenly becomes elbowed, forming an angle of about 90°. It is upwards of two inches in length. When full grown the larva (from which this description is taken) gnawed off some of the gauze, and, mixing it with bits of leaves, formed a tubular case, which hung downwards, resembling very much the pictures I have seen of the nest of, I believe, the tailor-bird; within this case the pupa hangs suspended by the tail, like a butterfly. The pupa itself is very long, like Ennomos angularia, and of a spotted gray colour. —*Id.*

Corrections in Mr. Newman's Description of the Larva of Ennomos erosaria.—In Mr. Newman's elaborate description of this larva (Zool. 8173), he observes that he can only notice its habits and food in confinement: this will probably account for some considerable discrepancies in his experience and mine. I have taken the larva, by beating, in Bucks, Suffolk and Hampshire, but invariably on oak: I have no doubt that, in its natural state, it feeds exclusively on that tree. What struck me, however, in Mr. Newman's account, as quite opposed to my experience, was the period given by him for the full growth of the caterpillar, *viz*. the beginning of July: on no single occasion have I ever found the larva full fed before the *end* of that month; in fact, just about the period when Mr. Newman's moths emerged. The perfect insect itself I have frequently beaten out of oak, and, upon referring to my note-book, I find the earliest date to be the 14th of August. Mr. Newman, I am sure, will not regard these remarks as in any way reflecting upon his accuracy, but simply as a contribution to the history of the insect when in a "state of nature."—*Joseph Greene.*

[This is exactly the kind of correction that I desire. The larvæ being only known to me in a state of captivity, I saw the almost inevitable necessity for some emendations both as to food and date. I shall be extremely obliged for specimens of Ennomos erosaria in the perfect state for the cabinet of the Entomological Club: I have not one tolerable specimen.—*Edward Newman.*]

Description of the Larva of Tephrosia crepuscularia.— Eggs laid in July, and hatched the beginning of August. Larva rests in a nearly straight posture, the middle segments sometimes arched, and the head porrected. Head narrower than the body, having a deeply impressed triangle on the face. Body almost uniformly cylindrical, but having the 3rd segment swollen all round, and the 4th segment swollen below, the swelling bearing the third pair of legs; there are two small warts on the back of the 12th segment, and the 13th segment has three short mamillary points below the anal flap and directed backwards: skin of the body much folded transversely. Colour of the head brown mottled: colour of the body wainscot-brown, with six very narrow and very indistinct darker rivulet stripes extending the entire length of the back; these are associated in three pairs, the stripes in each pair being closely approximate and in some parts scarcely separable; on the 6th segment the lateral stripe ascends obliquely towards the median line of the back; between each pair of stripes are several black dots; the sides of the larva exterior to these stripes are paler, especially on the 7th, 8th and 9th segments, and the back of the larva is manifestly darker on the 8th segment; there is a triple yellow spot on each side of the 10th segment close to the ventral claspers. The legs are brown, the claspers paler. Feeds on Pinus Larix (larch), Betula alba (birch), and Quercus Robur (oak), and is double-brooded; the larva of the second, which is now described, is full fed at the end of September, when it descends to the ground and spins a slight web, generally among fallen leaves, where it changes to a pupa, in which state it remains all the winter. The first brood of this species used to swarm in the larch plantation nearly opposite the Inn at Birch Wood Corner in March and April, but since these trees have been cut down the species has disappeared. Eggs laid by the spring females produce moths, in confinement, in July and August; but I have never seen the summer brood at large, and Mr. F. O. Standish has made the same remark to Mr. Doubleday, who has bred the early brood in February; but it may be remarked, as a general rule, that insects appear earlier in confinement than at large. I am indebted to Mr. Thomas Huckett for the opportunity of describing this insect.—*Edward Newman.*

Description of the Larva of Boarmia biundularia.—Egg laid by a captured female from the 21st to the 27th of May; larvæ hatched on the 4th and 5th of June. Rests in a nearly straight posture. Sometimes the middle segments form an arch, as in walking. Head semiporrect, narrower than the body, with a deeply impressed triangular mark on the face. Body almost uniformly cylindrical, but with the 3rd segment swollen above and at the sides, and the 4th segment swollen beneath, and having the 3rd pair of legs seated on the swelling; the 12th segment has two very small warts on the back; and the 13th segment beneath the anal flap has three short mamillary points directed backwards, the middle one acute, the lateral ones obtuse: the skin of the body is a good deal folded transversely, so as to give the segments the appearance of being subdivided into rings. The colour of the head is brown and mottled; in some specimens the darker tints form two conspicuous patches on the upper part of the face, nearly on the crown. Body particoloured; there is a very broad stripe down the middle of the body, and this contains and includes a number of darker longitudinal markings, especially conspicuous on the 2nd and 3rd segments, where they form two approximate parallel lines almost black; the dorsal surface of the 8th segment is darker, and the dorsal surface of the 7th and 9th segments lighter than the remainder of the back, and each of these three segments, that is, the 7th, 8th and 9th has a median dark spot transversely elongate and enclosed in oblique lines that seem faintly to indicate the lozenge-shaped markings, so usual in Melanippe and other genera of Geometræ: there are, moreover, several minute black dots in pairs on the back: on each side of the broad median stripe is a narrow black stripe, which is double throughout its length, but its two component parts are so close together on most of the segments that they appear united, while on the 9th and 11th segments they are separate and quite distinct, and they terminate in the anal warts on the 12th segment; this black stripe bends obliquely towards the back of the 6th and 7th segments; beneath this double black stripe is a yellow stripe on each side, which includes the spiracles; this yellow stripe is rather obscure on the 2nd, 3rd and 5th segments, but very distinct in the 6th, 7th, 8th and 9th segments, and on the 10th it descends into the ventral claspers: there is a rosy or reddish tinge on the anterior margin of the 2nd, 3rd and 4th segments, on the sides of the 6th, 7th and 9th segments, and on the anterior margin of the 10th, 11th and 12th segments; the ventral surface below the yellow stripe is very dark, in some specimens quite black, with a median pale stripe extending throughout its length; in some few specimens, however, this paler median stripe is obliterated: the under surface between the ventral and anal claspers is pale; the legs are brown mottled, and the claspers pale brown. These larvæ vary exceedingly, but more in the colour than the disposition of the markings. The usual food-plant is Quercus Robur (oak), but it feeds freely on the leaves of the plum in confinement; the larvæ were full fed on the 9th of July. Mr. Doubleday thinks this species is partially double-brooded, and Mr. F. O. Standish also every year takes specimens of the second brood. I am indebted to Mr. Wright for a most liberal supply of these larvæ. In this and the preceding description I have endeavoured to bring together all the information at hand respecting two insects which many entomologists, especially on the Continent, seem to regard as constituting but a single species; this, however, is not the opinion of our greatest English Lepidopterist, Mr. Doubleday; and it would ill become me to say a single word on a subject which our highest authorities are unable to settle: I may, however, state that the larvæ appear to me almost as difficult to distinguish as the perfect insects; that of B. crepuscularia has a yellowish tinge, that of B. biundularia a grayer tinge; the latter is a more variegated and ornamented looking larva.—*Edward Newman.*

Food-plant of Eupithecia virgaureata.—I have been breeding Eupithecia virgaureata from larvæ I found in Devonshire last year. The greater part came out in May or June, but a second batch are coming out now (from larvæ found at the same time as the former). I figured the larva, and have found a few here, all on Senecio

Jacobæa: of the number I took in Devon I only found one on Solidago virgaurea.—*Henry Moore; Albury, Surrey, September 6, 1862.*

Eupithecia debiliata.—I have great pleasure in adding to the testimony of the Rev. E. Horton (Zool. 7969) concerning the food-plant of the larva of this insect; for although I have taken a good number of the insect this season, yet in no single instance did I take one where Vaccinium Myrtillus did not grow. I have also taken the insect on Chat Moss, on a spot where Vaccinium Myrtillus was growing.—*Charles Campbell; 325, Rochdale Road, Manchester, August 25, 1862.*

Larva of Eupithecia debiliata.—I am told that a number of specimens of Eupithecia debiliata have been taken this summer in Burnt Wood, Staffordshire. The larva of this pretty and local species is at present undescribed and unknown. It should now be full fed. If this should meet the eye of any entomologist residing in the neighbourhood of Burnt Wood, might I ask him to spend a spare hour in beating all the tall-growing flowers in the wood, and sweeping all the low-growing ones? I think he would be almost certain to get the larva of E. debiliata. If he is disinclined to try his own hand at pug-breeding, and will send the produce of his labours to me, I shall be most happy to do my best to rear the larvæ and share the results. I imagine Vaccinium Vitis-Idæa or some species of Melampyrum will prove to be the food-plant, but it is mere conjecture, for I was never fortunate enough to meet with the insect, and only possess one specimen.—*H. Harpur Crewe, August 21, 1862, in the 'Weekly Entomologist,'* p. 19.

Double-broodedness of Eupithecia virgaureata.—During the month of May, Mr. D'Orville, of Alphington, kindly sent me a number of impregnated eggs of Eupithecia virgaureata, laid by females bred in confinement: these hatched in the course of a few days. I supplied the young larvæ with flowers of Anthriscus sylvestris (common parsley): upon this they fed, and had all spun up and turned by the end of June. They were in colour and general appearance almost precisely the same as the ordinary autumnal larvæ which I have been in the habit, for some years past, of taking upon Solidago virgaurea (golden-rod), in September and October. The perfect insects began to emerge during the last week in July, and had all come out by the end of the second week in August. They were rather smaller and darker in colour than the spring brood. I obtained impregnated eggs by putting a sprig of golden-rod in a bottle in the breeding-box. They hatched in a few days, and the young autumnal brood are now feeding upon flowers of Senecio Jacobæa.—*Id.*, p. 18.

Larva of Eupithecia pulchellata.—The larva of this beautiful species is at present quite unknown. It is taken in some localities pretty freely, flying over the unexpanded buds of Epilobium angustifolium (the large narrow-leaved willow-herb) in woods. It is possible that the larva may feed afterwards upon the flowers and seeds. It is at any rate worth going to try and find it out. A [bred] set of E. pulchellata would be a splendid addition to the cabinet. If any of your readers live in or near a locality where this plant abounds, will they kindly take a stick or umbrella, and beat the flowers and seeds well? If they get any larvæ let them take all the pains in their power to rear them. If they will send me one or two to look at, so much the better.—*Id.*, p. 19.

Is Eupithecia tripunctata double-brooded?—The larva of this insect appears upon the flowers of Angelica sylvestris, during the month of September and the beginning of October. It is not usually full fed till towards the end of the month. The perfect insect, in confinement, invariably appears early in May, sometimes at the end of April.

It seems scarcely possible that this spring brood of moths can be the parents of the autumnal larvæ; and I cannot help strongly suspecting that, like E. virgaureata, there is an intermediate summer brood, the larvæ of which feed upon some other plant. I have never yet been able to obtain eggs of this insect in confinement, and I never took the perfect insect till the day before yesterday (August 19), when I found a fine female sitting upon the wall of a wooden house near a wood, where I am in the habit of taking the larva in September. I conceive this to be an individual of the summer brood. Upon going into the wood, and examining the unexpanded flower-buds of the Angelica, I found eggs of either this species or E. trisignata.—*H. Harpur Crewe, in the 'Weekly Entomologist,'* p. 19.

Cidaria immanata. — About the end of July my friend Mr. D'Orville bred a very fine specimen of Cidaria immanata, from a larva which he had taken on the 29th of April, feeding on Fragaria vesca (wild strawberry). It was then very small indeed, but fed up well, and became very like the variety of the larva of Cidaria russata, which has no red spiracular line, being, according to Mr. D'Orville's description, of a yellowish green colour, with darker green dorsal line and yellow segmental divisions, and furnished with two anal points. That there might be no doubt about the species, the moth has been sent to Mr. Doubleday, and he pronounces it to be undoubtedly C. immanata, and tells us it is the only *bred* specimen of that species he has ever seen. I see by my note-book that I had several larvæ of C. russata brought me this spring —that is, from the middle of March to the middle of April—which had been found feeding on dock and other low plants; but these were then nearly full-grown, and many of them were changed to pupæ by the time Mr. D'Orville found his little larva; and the moths from them all appeared during the second fortnight of May, C. immanata of course at that time still continuing to feed in the larva state. I should not be surprised if it is found that the eggs of C. immanata, though laid in the autumn, do not hatch till next spring, and that in this respect it resembles its congeners, C. prunata, C. testata and C. populata, which, as far as my experience goes, remain in the egg till March or April. Any how, I think Mr. D'Orville has given us a clew which may lead, next spring, to this species becoming better known in its earlier stages than it seems to be at present. As to its food, it can scarcely be confined to one plant: probably, like C. russata, this species is polyphagous; but the chief thing to be noted is the *time* of its appearance as a larva, and this would seem to be the end of April and the greater part of May, the very time when the first brood of C. russata is on the wing in the perfect state. May I be allowed to append to this note an appeal for eggs or larvæ (wanted for figuring) of Cidaria psittacata, C. corylata and C. sagittata? If any one will kindly supply me with any of these species, I will gladly pay all expenses of postage, and make him the best return in my power. — *J. Hellins, Exeter, August* 18, 1862, *id.*, p. 20.

Occurrence of Lobophora polycommata at Albury. — Two days ago I took a torn specimen of Lobophora polycommata. Are not both the time and place somewhat unusual?—*Henry Moore; Albury, Surrey, September* 6, 1862.

Is Thyatira Batis double-brooded?— Last September I took three very fine specimens in perfect condition, and at the beginning of August this year I found two larvæ, which I was obliged to leave, having no opportunity then of feeding them.—*Id.*

Acronycta Alni at Tavistock. — On the 8th inst. I was at Tavistock, on the occasion of the field-day of the Devon and Cornwall Natural History Society, and, having lost the rest of the party, I and Mr. Reading strolled along the banks of the Tovey, and after we had been among the bushes for a short time I found a larva of Acronycta Alni on his coat. This I tried with various kinds of food, but it refused all, and died apparently of inanition.—*R. McLachlan ; Forest Hill, September* 18, 1862.

Economy of Acronycta Alni.—Going along a sandy lane here on September 1st, I observed what appeared to be sawdust sprinkled on some bramble-leaves. I thought it probably the work of a larva, and so looked for some stem whence it might have fallen. I now found an old dead bramble-stick, one end of which was hollowed. I split this down about a couple of inches, and disclosed a full-fed larva of Acronycta Alni. On looking at it two or three days later I found it had changed. The pupa is a rich deep chesnut colour, and is head uppermost in the stem. There is no appearance of silk or cocoon, and the thin layer of pith above the pupa is very slightly stuck together.—*Henry Moore.*

Xylophasia scolopacina near Hythe. — I beat out a specimen of this northern species at Saltwood Castle, near Hythe, Kent, in the last week in July. Probably it has never before been taken in this country so far south. Contrary to rule, it was very much darker than the northern examples.—*R. McLachlan.*

Description of the Larva of Epunda lichenea.— Head obviously narrower than the body, extremely shining, but emitting several slender hairs ; body uniformly cylindrical, obese, smooth, but emitting a very few, very distant, short and fine hairs ; these are only discernable under a lens. Head olive-brown, tessellated with paler markings: body dull olive-brown on the back, pale transparent olive-green on the belly, and having a paler stripe dividing the two colours, and including the spiracles ; the back has a series of somewhat lozenge-shaped marks down the middle, and on each side of each of these is a shorter oblique paler mark, the whole of these markings being obscure and indistinct, yet viewed together constituting a dark median stripe, with a paler and intercepted stripe on each side : the legs are shining, the claspers opaque ; both pellucid, and of an orange-green colour. The egg is laid on Senecio Jacobæa (ragwort) in August, and hatches in September, and the larva hybernates while very small : in confinement it feeds freely on Senecio vulgaris, and is full fed in May. Mr. Lynch kindly handed me two of these larvæ, which he had received from Mr. Fereday; one of them of the colour described above ; the other of an uniform green tint, the markings scarcely distinguishable.—*Edward Newman.*

Remarks and Observations on the Red Ant.

By Captain HENRY HADFIELD.

ON the 4th of July, about noon, I observed a number of ants foraging; they quartered the ground as pointers might do in hunting for game, and, like that animal, are, I am inclined to believe, guided or attracted by scent; moreover, they appear to follow in the track of others by the same means, for I frequently noticed, after the passing of one or more over or along the path, others—though several seconds might have elapsed—taking exactly the same course, and not unfrequently pausing or halting at precisely the same spots as their predecessors. I also remarked that in carrying off their prey they would occasionally halt, as if bewildered or uncertain which way to proceed, and then often double back in the opposite direction. I was at a loss to account for this, unless, as I have suggested, they are guided by scent, which might be overpowered by that arising from the object in hand. This reminds me that though they neither shake hands nor rub noses, they have a somewhat similar practice, seldom meeting without a friendly salute or recognition, at which time the quivering antennæ are momentarily crossed, whether receiving or imparting information I will not venture to say, but doubtless there must be some object in it. When an ant discovers some prey or victim it is astonishing how quickly others congregate, though they soon disperse on finding their services are not needed. One I saw go up to another and quietly relieve it of its burden, the latter apparently satisfied of its being in safe hands. Another I saw attempting to kill a small slender dusky caterpillar of about a third of an inch in length, having three longitudinal light stripes on the anterior part of the back and sides; it resisted, endeavouring to shake its assailant off, but all to no purpose; the ant, holding on with the tenacity of a bull-dog or blood-hound, was carried off by the caterpillar till another ant joined in the attack. I then came to the rescue, and with a blade of grass endeavoured to rid it of its tormentors, but it was not till I had taken up another, stronger and stiffer, that I succeeded in doing so; but by this time the caterpillar's strength was failing. Many insects were passed by unnoticed or unheeded, worms or caterpillars never. One of the latter had a very narrow escape: descending from a privet by its web it alighted on a walk where there were but few ants prowling; it was seized on at once by the tail, but before they could get a firm hold the caterpillar, suddenly bowing its back, jerked itself backwards, throwing its assailant a considerable distance to the rear; then redoubling its speed, it succeeded after many narrow escapes in gaining the shelter of a neighbouring bank, on to which it climbed, assisted by a sloping blade of grass. On revisiting the spot at intervals during the afternoon I found them employed as before, and even as late as 8 P.M., though decreased in number, they were as active and busy as ever, and I continued to watch them as long as the failing light admitted of my doing so. On returning, at a quarter past 10, I observed by candle-light a few running up and down as before, though a slight drizzling rain was falling at the time: at half-past 11 there were still a few remaining; one I stopped carrying a load, which it dropped at once; on taking a last look, a little after midnight, they had not all retired, notwithstanding the rain had increased.

July 5th, 8 A.M. Found a small party of ants at work; one I found carrying a large burden, which it let fall on being touched; it was a white, semitransparent mass, about the size of the egg, and not unlike a grub of some kind, there being at the extremity a small curved head-like projection of a brownish colour: another carrying off a dead soldier I likewise stopped, but instead of dropping its victim it struggled hard to retain it, hurrying on faster than ever, but I finally succeeded with a stem of grass in drawing the dead body from its grasp, but not until one of the antennæ had been broken off at the head or angle and the near hind leg injured, causing it to go limping away, though it soon recovered of this, and, notwithstanding the loss of the antenna, seemed little the worse for the encounter: it had been dragging the body with and by the antennæ, but, on meeting with any obstacle or impediment, one of the fore legs was frequently raised to assist in getting over it. One fine-looking soldier, of a lighter chesnut-brown, though of the same size as the rest, I observed polishing itself off: beginning at the head, which was held down for the purpose, it frequently passed the hand-like antennæ over it, then squatting down and thrusting the posterior forward, so that it could readily be laid hold of by the antennæ, it was seemingly pressed, as if for the purpose of extracting oily matter wherewith to anoint itself. I observed it do this two or three times in the course of as many minutes.

July 6th. Watched, for half an hour or more, a party of ants taking their morning repast off a worm but recently killed, for the blood was oozing from it; it was partially coiled up, forming a half-circle, within which the ants had chiefly collected, though some were on the body, mostly towards the anterior part, which was discoloured and swollen. Here they had already managed to make some incisions; in fact, deep cavities, into which the head was thrust, apparently to suck the blood, for during this operation there was no discernible motion, whereas when feeding on the flesh there was a constant lateral motion of the head, giving each side of the jaw alternate play. One had managed to cut out and almost sever a solid lump of flesh, but the tenacity and elasticity of the skin was such that its efforts to gnaw through it were in vain; it then tugged at it, but with no better success, for though greatly distended it did not snap: a comrade, seeing this, went to its assistance, and began gnawing away at the part nearest the body, while the other pulled with all its might, assisted by the antennæ and occasionally by its fore legs, the centre ones being thrust out at a right angle with the body, the hind legs thrown back to their greatest stretch and wide apart. After feeding I observed that the antennæ, mandibles and fore legs were successively cleansed; they are seemingly most careful in doing this, and in brushing off any dirt or dust. The repast was a most orderly and peaceful one; though occasionally walked over and trodden on they did not appear to resent it, and if noticed at all it was by a mere raising of the antennæ. One I saw dragging off a dead ant, but being frequently impeded by the inequality and roughness of the road, it relaxed its hold, and stepping back the body was poised and raised on high with the greatest ease imaginable, though about twice its own size. Dr. Carpenter says that the soldiers of this species are "nearly three times the size of the workers," and "rather differently formed from the rest."

It is astonishing how few are killed or even injured by pedestrians; however, it is but a small portion of the foot that comes in contact with the ground, owing to the projection of the heel, ball of foot, nails, &c.; besides ants are so strong and tenacious of life: their muscular organization is truly wonderful, enabling them to carry, with the greatest ease, objects many times their own size and weight, and that, too, up-hill and down-hill, and for any distance. Not having devoted much time to the study of ants, I was not aware of their being so nocturnal in their habits as to be foraging at midnight, and of a dark, wet night, too. Even supposing them to be but eighteen hours on the run the distance traversed must be very considerable, for, allowing but two feet a minute (a moderate calculation) it would in the time specified amount to nearly half a mile.

A worm having strayed on to a path was attacked by ants; one, though mounted on its back, was seemingly unnoticed at first, as the creature went wriggling on as before, till, being wounded, it sprung or jerked itself up, tossing its assailant well to the rear, but it soon renewed the attack, and, with the aid of a glass, I could see its huge curved mandible laterally opened to its greatest stretch, and then brought down on the back of the worm, causing it to writhe with pain. This was repeated with great regularity, not unlike the measured strokes of a machine. Other ants having joined in the assault I put an end to it by removing the worm to a place of safety. Some ants I observed endeavouring to carry off a dead worm, and though an inch or more in length three of the number sufficed to move it, but it was not until the party had been increased to ten or a dozen that they succeeded in dragging it off, on account of the obstructions, the chief of which being two lumps of hard earth adhering to its side and tail. Seeing this, one seized hold of the latter or smaller fragment, which not giving way readily the ant was dragged on with it. The larger piece two or three ants were most perseveringly endeavouring to detach, but, like the former, were drawn along, though exerting their utmost powers to keep a footing; this of course was a great hindrance, but ultimately it gave way, too, when the advance was greatly facilitated. During this operation I observed one ant go up to another and drag it along by the antennæ; there was no resistance offered, nor, when released, was the liberty resented: what the object of it was I could not discover; possibly a lazy or refractory member of the community was being thus forcibly recalled to a sense of duty. A lame or sick ant that went halting along was noticed by all comers, some going up to it and feeling it carefully, passing the antennæ over every part; others would accompany it for some distance: all seemed ready to aid or comfort it. I saw two soldiers carrying off a warrior of the yellow species; one had seized it by the base of the antennæ, the other had laid hold of the body, the prisoner resisting stoutly, and clinging with the greatest tenacity to any inequality in the road, causing frequent halts; the force with which it was dragged along doubled the body, which seemingly was in danger of snapping: having obliged its assailants to desist and remove it to another spot, it endeavoured to escape, but was again captured, this time by a single soldier of the red species, which, turning it over on its back and raising it up, would have walked off with it had it been allowed to do so, but, thinking it sufficiently persecuted, it was placed in security, apparently uninjured, except having one of the antennæ bent or distorted. HENRY HADFIELD.

Ventnor, Isle of Wight.

Coleoptera in Coombe Wood.—The strict preservation of this old hunting-ground has so increased the number of pheasants, that insects may reasonably be expected to be not so plentiful as they used to be. Lepidopterous larvæ are so easily picked up by birds that few arrive at their perfect state, and butterflies and moths appear very scarce; but beetles are so inconspicuous, and protected by position in their earlier stages, that they do not seem to have become any rarer. I have taken the following species during the past season, among many others:—Notiophilus rufipes (not uncommon under dead leaves where large stones are underneath them), Myrmedonia limbata (47), Atemeles emarginatus, Aleochara mycetophaga, Bolitochara bella, Haploglossa nidicola, Callicerus rigidicornis (8), Gyrophœna pulchella, Mycetoporus clavicornis, Philonthus carbonarius, P. punctiventris (in profusion under cut grass), P. Puella, P. decorus, Stenus fuscicornis, Oxyporus rufus, Choleva spadicea, C. nigrita, Leiodes humeralis, Amphicyllis globus, Scaphidium quadrimaculatum, Dendrophilus punctatus, Meligethes memnonius, M. erythropus, Lœmophæus duplicatus, Cercus bipustulatus (not uncommon on Epilobium), Dermestes vulpinus, Byrrhus dorsalis, Melasis buprestoides, Diacanthus holosericeus (very abundant on oak-shoots, and especially where oak-galls are rotten), Malthinus frontalis, Ochina Hederæ, Mordellistena abdominalis, Conopalpus testaceus (both sexes out of oak-boughs), Abdera quadrifasciata (ditto), Rhynchites megacephalus, Apion minimum, A. Spencii, A. ebeninum, A. rubens, Balaninus turbatus, Orobitis cyaneus, Cœnopsis Waltoni, Nanophyes Lythri (swarming on Salicaria), Acalles ptinoides, Pachyrinus quadrituberculatus, Orchestes avellanæ, O. ilicis, Coccinella hieroglyphica, Tritoma bipustulatum, Scymnus capitatus, Aspidophorus orbiculatus. On the Thames bank near Hammersmith Bridge (Surrey side), Anchomenus scitulus, Trogophlœus arcuatus, Stenus nitidiusculus, Lesteva punctata, Errirhinus Festucæ and Tachyerges Saliceti have been very abundant; and I also took the following: — Bembidium gilvipes, Stenolophus exiguus, Clivina collaris, Gallicerus obscurus, Ilyobates forticornis, Achenium humile, Ocalea rivularis, Baridius picicornis.—*E. C. Rye ; 284, King's Road, Chelsea, S.W.*

Bradycellus collaris. — Any coleopterous readers of the 'Zoologist' will do well to examine their specimens of this insect; all that I have seen are nothing but small B. harpalinus. Dawson notices the great similarity of B. collaris and small examples of B. fulvus, and, as he has confounded B. harpalinus with the latter species, it is no wonder that he found this resemblance. It seems doubtful whether we have B. collaris at all (if indeed it be a distinct species).—*Id.*

A curious Habit of Agabus uliginosus. — I was one morning last week searching along a pond-bank, after a heavy shower of rain, for some Chrysomelidæ which I found frequenting the flowers of the common buttercup, when my attention was drawn to a dark creature attached to the stems of some high grass which grew near. Thinking it was one of the genus Carabus, I picked it off, when, to my astonishment, it proved to be Agabus uliginosus. Making further search, I soon found several others in a similar position. They had all climbed the grass-stems as high as they would bear (some eight inches), in fact till they began to bend with the weight; and these Agabi appeared to be holding on tight by their fore legs, and, with their heads drawn inwards, to be revelling in the hot sun. That such an apparently clumsy beetle as the Agabus should perform such a feat as this is a circumstance I think worth recording; and it also explains the mystery of this insect being sometimes found in the bottom of the net when sweeping long grass and herbage by the side of ditches. The Agabi appear to be fond of sunning themselves, for I have often found A. maculatus on the top of a stone wall, evidently enjoying the blaze of a July sun, and where it could only have got by using its wings; but attached to the uttermost part of a blade of grass is the last place I should ever have thought of for searching for any of this family. — *V. R. Perkins, in 'Transactions of the Tyneside Naturalists' Field Club.'*

Acentropus niveus : its Characters and Affinities. — Having been myself one of those who ventured a rash guess that this insect was lepidopterous, and this guess having possibly influenced the opinion of some subsequent writers on the subject, I beg to retract, withdraw and cancel this or any other guess I may have ventured, and to admit that I never ought, with such very insufficient knowledge, to have published them. My attention has been again called to the subject by Mr. Cooke's observations (Zool. 8085), which I have read with the most careful attention, but which seem to me to leave the question as far off a solution as ever. Various guesses are adduced in support of the lepidopterous hypothesis. Mr. Westwood has discovered scales, but there are no such scales on the wings of any lepidopteron; scales far more like those of Lepidoptera occur on the elytra of a thousand beetles: moreover, the character of "wings clothed with scales" applies only to a portion of the Lepidoptera, the large and heterogeneous family at present called Psychidæ having both wings and bodies clothed with hairs exactly after the manner of the Phryganidæ. The thorax in Acentropus is furnished with tippets, and certainly this is the case in the most conspicuous groups of Lepidoptera; but does it obtain throughout? are the Psychidæ thus provided? Again, the hind wings are said to have a bristle, but this will tend as much to unite Acentropus with the Hymenoptera as with the Lepidoptera. Lastly, Mr. Brown is quoted as stating "The pupa-case puts the relationship of the Acentropus beyond a doubt; it is clearly the chrysalis of a moth" (Zool. 5919); but neither Mr. Brown nor Mr. Cooke state in what characters the pupa of a moth differs from that of a Phryganea. In fine, viewing the question under the cross lights thrown on it by the various guesses hitherto published, we are compelled to admit that no progress whatever has been made towards settling the question; and I fear I cannot concede that Mr. Cooke has taken a single step in the right direction. The proper mode of proceeding in such a case as this is the following:—

1st. Give a life-history of Acentropus: describe its egg, larva, pupa: define economy, food and metamorphosis.

2nd. Describe the imago: its mouth, wing-rays, thorax and legs should have especial care bestowed on them.

3rd. Define the difference in economy, metamorphosis and structure between a lepidopterous and phryganidous insect, taking universally-acknowledged types, as Sphinx Ligustri and Phryganea grandis.

4th. Institute the most rigid comparison between Acentropus and these two insects, and give the result of the comparison.

Above all things, come to the task quite unprejudiced: throw overboard all the guesses of others and all the leanings of your own mind, and give your verdict solely on the evidence before you.—*Edward Newman.*

Proceedings of Societies.

Entomological Society.

September 1, 1862.—John Lubbock, Esq., V.P., in the chair.

Donations.

The following donations were announced, and thanks ordered to be given to the respective donors:—'The Zoologist' for September; presented by the Editor. 'The London Review' for August; by the Editor. 'Journal of the Society of Arts' for August; by the Society. 'Sitzungsberichte der Königl. bayer. Akad der Wissenschaften zu München,' 1862, Part 1; by the Academy. 'Reise nach Mossambique,' von Dr. Peters (5ter Band, Insekten und Myriapoden); by J. W. Dunning.

Election of Members.

Beriah Botfield, Esq., M.P., F.R.S., &c., of Norton Hall, Daventry; Edmund Walcott, Esq., of the Oriental Club, Hanover Square; and Peter Inchbald, Esq., of Storthes Hall, Huddersfield, were elected Members of the Society; and Wm. Phillipps, Esq., of Reigate Lodge, was elected a Subscriber.

Exhibitions, &c.

Mr. Bond exhibited a female specimen of Sphinx Nerii, taken at rest in a garden at Hastings on the 2nd of August last; and specimens of a Tinea which he considered to be T. confusella, now for the first time taken in England, though it had previously occurred in Ireland. Mr. Stainton, however, was of opinion that the species was T. nigripunctella.

Mr. Bond, on behalf of Mr. Piffard, exhibited specimens of a Tortrix, apparently of the genus Spilonota, taken on the trunks of poplars near London, in June: the perfect insect concealed itself in the chinks of the bark, and was very sluggish. A description of the insect, by Dr. Knaggs, under the name of Spilonota Doubledayana, *n. sp.*, was read. *

Mr. Stainton exhibited a living specimen of Zelleria hepariella, and called attention to its position when in repose, resting on the four anterior legs, the hind legs being elevated by the side of the abdomen, and with the head downwards, like an Argyresthia. Mr. Stainton remarked that the pertinacity with which this species had been referred to the genus Gracilaria was rather singular; it formerly did duty in all British collections as Gracilaria rufipennella, and since that error had been pointed out, and a new genus, Zelleria, created for it in the family Argyresthidæ, the insect had actually been twice described as a Gracilaria—by Gregson as G. Haighii (Zool. 5295), and by Herrich-Schäffer as G. taxella, in his 'Schmetterlinge von Europa.' The specimen exhibited had been obtained by beating yew trees on Mickleham Downs, during the previous week.

Mr. Stainton also mentioned, as showing the progress that Entomology was making in other countries, that he held in his hand a list of the entomologists of Canada, who were thirty-six in number.

The Secretary read a letter addressed to him by Miss Farington, of Woodin Hall, Preston, Lancashire, requesting information as to the name, habits, and best mode of extirpation of a small beetle which occurred in prodigious numbers in an old house occupied as a grocer's shop; it had been observed for the first time in that neighbourhood during the present year, infested the furniture and beds, and (the writer stated) ate holes through the clothes of the inhabitants. Specimens of the insect were exhibited, which proved to be Ptinus hololeucus.

Sir John Hearsey exhibited various insects from India and China, including an enormous gad-fly, two fine species of Cimex, a Cetonia, the cotton-insect (Aphis), and other objects of interest.

Mr. Waterhouse exhibited seven British species of Homalota not recorded in his 'Catalogue,' and with which he had but recently become acquainted, and read the following notes respecting them :—

"1. H. autumnalis, *Erichson*. One specimen found by myself in beating dead sticks in a damp wood at Hawkhurst, in Kent. I have likewise seen specimens in the collections of Dr. Power and Mr. Rye.

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* This insect has since been recognized as Pædisca oppressana, described in 1835 by Treitschke, in the tenth volume of his 'Schmetterlinge von Europa.' The species is included among the British Tortrices in the Museum 'Catalogue' of the late J. F. Stephens, and in the 'Catalogue' of Mr. Doubleday (ed. 1859).

2. H. luteipes, *Erichson.* The specimens exhibited were presented to me by Mr. Wollaston, and were obtained at Whittlesea Mere. I have seen other specimens found by Dr. Power in the London district.

3. H. intermedia, *Thoms.*, *Kraatz.* The two specimens laid before the Society were found at Purley Down, by Dr. Power. I have seen no other British examples of the species.

4. H. paralella, *Mannerh.* This appears to be a northern species. I have seen a series of specimens forwarded to Mr. Douglas by Mr. Gregson, of Liverpool, and since specimens taken by Mr. Hislop in Scotland.

5. H. subterranea, *Mulsant.* The only specimen which I possess is from Paisley, and was given me by Mr. Morris Young.

6. H. lepida, *Kraatz.* This also appears to be a northern species. I possess a specimen from Scotland, for which I am indebted to Mr. Andrew Murray.

7. H. palleola, *Erichson.* I exhibit two specimens of this insect, which were sent me (with the above name attached) by Mr. Linnell, who finds the insect, I am informed, in the neighbourhood of Reigate. The species, I have no doubt, is correctly determined."

The Rev. Hamlet Clark exhibited specimens of four species of Hydroporus hitherto undescribed, and stated that descriptions would be given in the forthcoming number of the 'Journal of Entomology;' one of them was taken in Spain, the other three in Great Britain: they were—

1. Hydroporus Andalusiæ, very nearly allied to H. Clarkii, *Woll.* (which was taken in the Canaries); captured by Mr. Gray and Mr. Clark near Malaga, in May, 1856.

2. H. severus, allied to H. assimilis, *Payk.*, and more closely to H. fuscitarsis, *Aubé;* taken by Dr. Ernest Adams in a small river near Stowmarket, and by Mr. Clark in a running stream near Horning Fen, in May, 1855.

3. H. derelictus, allied to H. planus, *F.*, and H. erythrocephalus, *L.*; received from the Orkneys in August, 1855.

4. H. celatus, closely resembling H. vittula, *Er.*, and H. incertus, *Aubé;* taken by Dr. Power in a stream in Bradgate Park, Leicestershire, in August, 1855, and in a stream at Black Park, Uxbridge, in August, 1856, and by Mr. Brewer in a stream in Tilgate Forest.

Mr. Clark also exhibited Hydroporus 5-lineatus, *Zett.*, hitherto unrecorded as British, but which had been taken several years ago by Mr. Waterhouse, probably in the London district.

Mr. Lubbock exhibited specimens of a small Hymenopterous insect swimming in water by means of their wings; the specimens were taken with a net in a pond near Mr. Lubbock's residence in Kent, and had been recognized by Mr. Walker as Polynema fuscipes, of the family Proctotrupidæ. The fore wings were large, and profusely fringed all round; the hind wings small and very narrow: in the general appearance of the insect there was nothing to suggest the probability of an aquatic habit: the motion through the water did not appear to be in any way assisted by the legs, but was due to the sharp jerking action of the wings. The insects were able to remain three or four hours beneath the water, but required occasionally to swim to the surface, or crawl thither up the stem of an aquatic plant, in order to breathe; so, at least, it was to be inferred from the fact that specimens which had been confined for a whole night, in such a manner as to be unable to reach the surface, were all found dead in the morning. Mr. Lubbock had never seen the insect fly, but of the other species of the genus one was known to feed on the eggs of Pontia brassicæ, and consequently was of terrestrial habits. With reference to what he termed the geological aspect of the question, Mr. Lubbock remarked that, if this insect had been found in a fossil state, no geologist would ever have imagined that it was an inhabitant of the water,—a circumstance which showed the necessity of some degree of caution in deducing from the structure of animals conclusions as to their habits.

Paper read.

Professor Dr. Schaum, of Berlin, communicated the following description of and remarks on Scaritarchus Midas, a new genus and species of the Coleopterous group Scaritidæ:—

SCARITARCHUS.

"Labrum antice subemarginatum. Mandibulæ intus unidentatæ, supra rugoso-striatæ. Maxillæ apice rotundatæ. Mentum dente medio simplici, profunde canaliculato, lobis lateralibus rotundatis breviori. Palpi maxillares articulo ultimo triangulari, lato, fere subsecuriformi, præcedentis longitudine; labiales articulo ultimo fortiter securiformi. Prothorax breviter cordatus, angulis posticis distinctis, basi subemarginatus. Coleoptera ovalia, striato-punctata. Tibiæ anticæ supra canaliculatæ, extus tridentatæ, dentibus inferioribus approximatis obtusis, tibiæ intermediæ fortiter unidentatæ. Trochanteres postici breves, validi, apice rotundato.

SCARITARCHUS MIDAS. Niger, prothoracis margine laterali basalique et elytrorum margine laterali late aureo, his crebre striato-punctatis, interstitiis subconvexis, carinula humerali in interstitium continuata. Long. 1½ poll. et ultra.

The splendid insect here described constitutes a new genus of Scaritidæ, and belongs to the first section of that group (Lacord. Gen. i. 192), which embraces Pasimachus, Emydopterus, Carenum and Scaraphites. It stands nearest Carenum, resembling it in the securiform last joint of the labial palpi, differing from it, however, in the broad, triangular and almost securiform last joint of the maxillary palpi, in the simply and feebly emarginated labrum, in the cordate prothorax with distinct angles, and in its strongly unidentate intermediate tibiæ. A few specimens, collected in Laos by the late M. Henri Mouhot, have recently been received by Mr. Stevens. A figure of it will be shortly given."

Special General Meeting.

The Secretary announced that a requisition, signed by six members of the Society, had been presented to the President and Council, requesting that a Special General Meeting be called, for the consideration of certain specified alterations in the Bye-Laws: a copy of the Bye-Laws with the proposed alterations was laid on the table, and was taken as read to the Meeting; and notice was given that a Special General Meeting of the Society would be held for the above purpose on Monday, the 1st day of December next, at 7 P. M.—*J. W. D.*

Errata.— Page 8163, line 11 from bottom, for "stubble" read "stable:" 8164, line 15 from top, for "earnestly" read "exactly;" line 18, dele "patient and:" 8164, third line from top, for "it was the dark deed" read "it was the dark doing."

Has the Giraffe Two Horns or Three?

"Who shall decide when doctors disagree?"

THIS question does not appear fraught with great difficulty, and yet it has agitated the scientific world for some time past, and appears as far from a solution as ever: it is brought prominently before a more extended public in the seventh number of the 'Intellectual Observer,' by Dr. Cobbold, who appears to have thoroughly investigated the subject, and who states the *pros* and *cons* with great clearness as well as fairness. The theory that the giraffe is possessed of three horns originated, as I believe, with that illustrious traveller, Dr. Rüppell, who declared in the most emphatic manner that a third horn existed in the adult male: these are his words:—"The horns constitute the principal generic character, they being formed by distinct bones united to the frontals and parietals by a very obvious suture, and exhibiting throughout, the same structure as the other bones. In both sexes one of these abnormal bones is situated on each branch of the coronal suture, *and the male possesses an additional one, placed more anteriorly, and occupying the middle of the frontal suture.*" Cuvier entirely corroborates this view of the case, and says without any hesitation, "*In the middle of the forehead is a tubercle or third horn, broader and much shorter than the others, but articulated in the same manner.*" Professor Owen, to whose judgment almost every zoologist will be predisposed to bow, refuses entirely to adopt this view: writing of the giraffe, in 'Brande's Dictionary of Sciences,' he says that until lately we find it described as having callosities on the knees and sternum, and "as a kind of *lusus* with three horns, of which one, being articulated over a suture in the middle line of the forehead, seemed to take away the chimærical nature of the unicorn, by indicating a transition to that heraldic monster. *The truth is,* however, *that the giraffe possesses neither those callosities nor this median articulated horn.*" I have *italicised* those passages which express in the strongest manner the discrepancy of opinion on this moot question.

Dr. Cobbold, after citing the authorities above noticed, expresses his own opinion in favour of what may be called the Ruppellian theory, assigning his reasons for doing so in the paragraphs which follow:—

"1. In the young male giraffe which died last year at the Zoological Society's Gardens, Regent's Park, there was only a slight thickening of the subdermal periosteal tissues immediately above the central frontal eminence; but it was sufficiently thickened to allow of detachment by dissection, and I have preserved the separated portion in a dried state. This young male giraffe was only about six weeks old.

"2. In another young male giraffe, which died at the Zoological Society's Gardens on the 2nd of December, 1859, the fibrous subintegumentary aponeurosis was still more markedly thickened, but there was as yet no development of a gristly cartilagenous tissue within its substance. This giraffe was born on the 6th of July, 1859, and was therefore about five months old. I have given an account of the accidental circumstances which led to its death, together with the anatomical peculiarities it presented, in a paper entitled 'Contributions to the Anatomy of the Giraffe,' published in the Zoological Society's 'Proceedings' for February 14th, 1860.

"3. In an immature male giraffe, which died at Edinburgh during the severe winter of 1854, I found the frontal aponeurotic thickening much more marked, forming on the dried skull a distinct fibrous mass. I subsequently detached this fibro-cartilaginous matrix for separate preservation and examination, but it was, I believe, swept away with other museum *débris* by an assistant who had no knowledge of its value. After removal it was perfectly transparent and free from osseous deposit. The giraffe in question belonged to Wombwell's travelling menagerie, and was represented to me as being about eighteen months old. Having, at the outset, devoted three weeks to its dissection, and renewed my examinations of the various organs at subsequent intervals, I may, for further particulars respecting its anatomy, death, &c., refer to my several memoirs in the 'Edinburgh Physiological Society's Reports' for 1854, the 'Edinburgh New Philosophical Journal' for 1856, and more particularly to the June number of the 'Annals of Natural History' for 1854.

"4. When engaged, during the autumn of 1856, in writing the article 'Ruminantia' for the 'Supplement' to Dr. Todd's 'Cyclopedia of Anatomy and Physiology,' I took occasion to visit the Museum of Trinity College, Dublin, expressly with the view of examining the adult cranium of a fine male giraffe, which I understood to be preserved there. As a result of this inspection I subsequently wrote as follows:—'Through the kindness of Dr. Ball we have examined the skeleton of a male giraffe, which died at the Dublin Zoological Society's Gardens, and which is now preserved in Dr. Harrison's anatomical museum. In this individual the central cranial eminence is not smooth as in our specimen (above referred to); on the contrary it is particularly rough, owing to the deposition of osseous nodules, which bear a marked resemblance to the irregular bony laminæ prolonged from the attenuated margins of the bases of the true horns. If these rough prominences could be shown to be separable by maceration, we might with good reason infer the rudimentary existence of a third horn.' This fine male formerly belonged to the London Zoological Society, and was bred in the Society's Gardens, Regent's Park. I have noted the peculiar cause of its death in the paper already referred to, in the paper, already referred to, in the Zoological Society's 'Proceedings' for 1860.

"5. After completing the article above mentioned, I visited the Museum of the Royal College of Surgeons, Lincoln's Inn, and having, through the ever-ready kindness of the late Prof. Quekett, had an opportunity of inspecting the giraffine crania there preserved, I was in time to append a foot-note to 'Ruminantia' to this effect:—'The osseous nodules noticed in the Dublin specimen not only exist in one of these crania, but they could be partly raised from the subjacent bone by the easy insertion of the finger-nail under the margin.' Since the year 1856 I have repeatedly examined these crania, and have no shadow of doubt as to the existence of an ossified synchondrosis which has united the third horn to the frontal eminence.

"6. The distinctness between the third horn and the frontal eminence was still more significant in the skull of an adult giraffe which died at the Zoological Society's Gardens several years back; but in this case also there was union by synchondrosial ossification. I examined the cranium in 1857, before the skeleton was finally cleaned and sent away, and have since been informed that it is preserved in a museum at Bristol.

"7. The most cogent evidence, however, which I can adduce is that derivable from the skull of a young male, whose entire skeleton may now be seen set up and preserved in the Derby Museum at Liverpool. This skeleton was formerly in the possession of Mr. Gerrard, the accomplished taxidermist at the British Museum, and I am indebted to his son for the loan of a carefully executed drawing. In this instance, as I am distinctly and unequivocally informed by several gentlemen connected with the British Museum, who have examined the skull, the third horn became readily detached by maceration; it was for a considerable time separately preserved, and presented all the ordinary characteristics of the two posterior horns, of whose epiphysial character no one entertains the slightest doubt. The third horn, or central pseudoceratophorous epiphysis, has since been glued on to its original position, and may now be seen *in situ*, as a standing proof of the correctness of Rüppell's original persuasion.

"8. In the Museum of the University of Tübingen there is also preserved a similar skeleton of a young male giraffe, in which—

according to verbal information kindly communicated to me by Dr. Gunther, of the British Museum, who is familiar with the specimen,—the third horn was equally well marked and separated by maceration.

"9. Lastly, I adduce additional conclusive evidence from Dr. George Jæger's 'Bemerkungen uber die Hörner und Epiphysen,' &c., as recorded in the twenty-sixth volume of the 'Acta,' already referred to, and I beg to call particular attention to this extract, which I translate from a foot-note appended to the memoir in question; the *italics* are mine. The author says:—'In the skull of a young male in the collection at Munich, whose horns are scarcely two inches long, and likewise separated, there is, in the place of the third central horn, a rather strongly marked elevation of the frontal bone, but no trace of an epiphysis. In the skull (nineteen inches long) of a male received a short time ago from the North of Africa, through Dr. Heuglin, which skull we believe to be mature, the suture of the hind horns is still perceptible, but the serrated borders are almost firmly united to the frontal and parietal bones. *The mesial horn, however, is still quite separated by the epiphysial cartilage from the frontal and nasal bones*, whose sutures are not yet obliterated, as also obtains in the other cranial bones. The anterior margin of the central horn-bone projects about one inch over the posterior limit of the nasal bone. From thence the anterior part of the horn rises to the tip, forming a very gradual slope, while the posterior inclination is comparatively steep and short. It results from this that the central horn unites with the bones much later than the hinder horns, which are common to both sexes.'"

A few questions that are not mooted by Dr. Cobbold appear to me deserving of attention: *First.* Is the female giraffe invariably without the frontal process here denominated a third horn? *Secondly.* Supposing this frontal process not to be a horn, what is it? is it the homologue of any other bone or process among suckling animals? Is there any reason to suppose that at any period of the life of the male giraffe the horns, or either of them, are denuded of hair? In conclusion, I desire to state that I am quite ready, from an attentive perusal of Dr. Cobbold's paper, to give in my adhesion to the tricorn theory: the question seems to have been removed, by careful investigation, from the region of conjecture, and must henceforward cease to be regarded as the fallacious hypothesis which Professor Owen appears to have considered it.

EDWARD NEWMAN.

Notes on Sea Anemones. — For the information of the anemone-loving readers of the 'Zoologist' who may visit Tenby, I send the results of my researches at that charming spot during three weeks' residence in July last. The spring tides were not very favourable for collecting, owing to a strong west wind, which blew back the spray and prevented me from visiting Lidstep Caverns and the Woolhouse Rocks, the latter designated by Mr. Gosse as "that rich preserve of zoophytic game." I availed myself of the assistance of the local collectors, Jenkins and his son Lewis, most honest, attentive and civil men, whom I have great pleasure in recommending to the notice of all aquarian naturalists visiting Tenby. The following are the species of Actiniæ which I secured, in addition to specimens of Echinus miliaris, Holothuria, Aplysia, Doris, Eolis, Terebella, and many beautiful kinds of star-fishes:—

Sagartia nivea. Very fine specimens and plentiful at Castle Rock, and *var.* obscurata on the Ridge between Caldy and St. Margaret's Islands.

S. rosea. Fine specimens, but not very numerous, at St. Catherine's and the Ridge.

S. venusta. Beautiful specimens at St. Catherine's, and a less brilliant variety at the Ridge.

S. viduata. Very scarce. Three specimens only were met with, and those at Castle Rock.

S. Bellis. Rather scarce. *Var.* tregiensis found at the Ridge, and several of the *var.* modesta in the same locality.

S. Troglodytes. Very numerous. Small specimens on Gascar Rock, and fine ones at St. Catherine's. *Var.* scolopacina, Aurora and auricoma taken (one specimen only of the last-mentioned).

S. miniata. Good at Castle Rock, but small. Fine specimens dredged off St. Gowan's Head.

Bunodes gemmacea. Beautiful specimens and tolerably plentiful on the south and west sides of Caldy Island.

B. crassicornis. Fine specimens dredged off St. Gowan's Head.

Anthea Cereus, *vars.* smaragdina and rustica. At the Ridge.

Actinoloba Dianthus, *var.* brunnea and sindonea. At St. Catherine's and Castle Rocks.

Actinia Mesembryantheum. Abundant everywhere, and, although of the commonest kind, not to be despised, for many are very pretty.

Several of the A. Dianthus were double, *i.e.*, two disks sprouting out of one column. The curious glaucous warty anemone (*Bunodes thallia*), discovered by Mr. Gosse at Tenby in 1854, was not to be met with. The collectors had never seen it until I showed them the plate in that gentleman's 'Actinologia,' and so I fear it is extinct on the Welsh coast. It is to be found (though scarce) at Ilfracombe, for I have two specimens in my tank which I took last summer. It behoves amateur collectors to be careful with the hammer and chisel in removing specimens of all kinds of anemones, for it is to be feared that for one secured, a dozen are frequently destroyed. I speak from what I have often witnessed at the coast. I have observed in my tank the peculiar elongating of *one* tentacle only (mentioned by Mr. Gosse) in the following species, *viz.*, S. bellis, S. rosea, S. venusta, S. Troglodytes and S. miniata. Is it possible that Nature intended this as a means of assisting the creature to procure food? for I often notice that it quickly sweeps to the mouth any passing atom brought by the water in syringing. I was fortunate in capturing a very beautiful specimen of the Portuguese man-o'-war (*Physalia caravella*), with its attendant satellites, two Velellæ, on the Ridge before mentioned. I gave them to my friend the Rev. T. N. Hutchinson, but they survived only a day. They were the first taken at Tenby during the season, but Mr. Gosse, in a recent letter to me, says that "they occur on the coast round Torquay nearly every summer," and that "two have come under my notice this season." My old friends the S. Sphyrodeta (the spontaneous fission of which is described at Zool. 7977, but by an error therein called S. nivea) are well and thriving. The eight specimens which I received from Ilfracombe in August, 1861, have increased to *thirteen*, and so well and healthy are they, and of adult size too, that it is not possible to distinguish those which have spontaneously divided from their entire fellow captives. — *W. R. Hughes; The General Hospital, Birmingham, September* 5, 1862.

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